

SEPTEMBER 2024

10:00 pm on September 1
 9:00 pm on September 15
 8:00 pm on October 1

To use this chart: hold the chart in front of you and turn it so the direction you are facing is at the bottom of the chart.

- **Bright Stars**
- **Medium Bright Stars**
- **Faint Stars**

Scan dark skies with binoculars:

- M-13: Globular star cluster
- M-22: Globular star cluster
- M-31: The Andromeda Galaxy
- Double Cluster in Perseus

Autumn is coming! The days are getting shorter and the nights longer. The autumn equinox is on September 22. On this date, the Sun rises due east and sets due west.

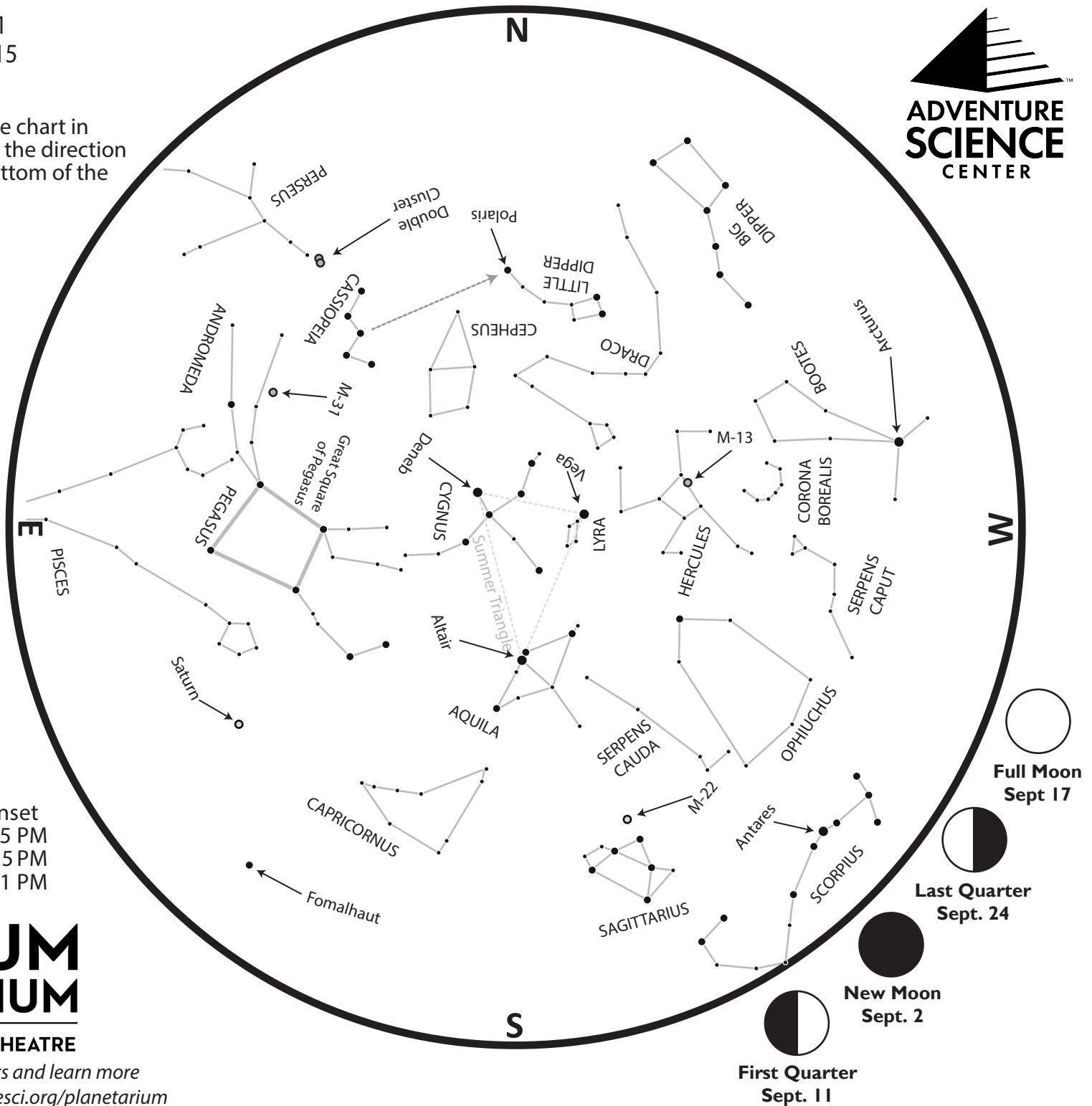
From Nashville:

	Sunrise	Sunset
Sept 1	6:19 AM	7:15 PM
Sept 15	6:30 AM	6:55 PM
Oct 1	6:42 AM	6:31 PM

SUDEKUM PLANETARIUM

JUDITH PAYNE TURNER THEATRE

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After Sunset

Look low in the northwest for the **Big Dipper**. As famous as the Dipper is, it's not always easily visible from our latitude in Tennessee. In the spring and summer, the Dipper is easy to find shortly after sunset. As we approach autumn, it gradually appears lower to the northern horizon.

The Big Dipper is not officially a constellation; it's what astronomers sometimes call an **asterism**. It's a familiar name for this pattern of stars, especially used by observers in the United States, but it's not one of the 88 constellations recognized by astronomers worldwide. **Ursa Major the Great Bear** is the official constellation here, but you'll need dark skies to see its fainter stars.

Use the two stars at the end of the Dipper's bowl to lead you to **Polaris**, also known as the **North Star**. Polaris is not a particularly bright star, but it does remain fixed in the sky throughout the night and throughout the year. When you face the North Star, you're facing due north. Polaris is at the end of the handle of the **Little Dipper**. This group of stars is also officially known as **Ursa Minor the Little Bear**.

Next, turn your gaze high overhead for the three bright stars that make up the **Summer Triangle**. These may be the first stars you see as the sky begins to darken. Each of these stars is part of its own constellation. **Cygnus the Swan**, **Aquila the Eagle**, and **Lyra the Harp** are more easily seen under dark skies.

Low in the southwest is the hook-shaped constellation **Scorpius the Scorpion**. The red star **Antares** marks the heart of the scorpion. This star's name means 'rival of Mars', as its red color nearly matches that of the 'red planet.'

Just to the east of Scorpius is **Sagittarius the Archer**. To ancient civilizations it may have looked like a mythical centaur holding a bow and arrow, but to modern stargazers it looks a lot more like a teapot.

As the sky begins to darken, look low in the east-southeast for **Saturn**. Saturn's rings are visible with a small telescope.

Stay out past midnight to catch **Jupiter** rising in the northeast. The giant planet rises above the horizon around 1 am near the beginning of September, and by 11 pm by the end of the month. Wait an hour or two after the planet rises to catch it above the trees and buildings that may block your view. By late autumn Jupiter will be up much earlier in the evening. A small telescope not only reveals the four largest moons of Jupiter, but also the planet's cloud bands. Jupiter has stripes!

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You may be even able to see those four **Galilean moons** of Jupiter with just a good pair of binoculars. If you have trouble pointing your binoculars at Jupiter, try leaning them up against the side of a building or another steady surface. Whatever you use to get that close-up view, watch the moons over several nights as they orbit around their parent planet.

From Dark Skies

Bright outdoor lighting can make it hard to see all but the brightest stars. On a clear night, find a dark spot far away from city lights, give your eyes time to adjust to the dark, and look for even more celestial sights.

Late summer evenings are great for spotting the **Milky Way** coursing from Sagittarius and Scorpius, through the Summer Triangle and on towards **Cassiopeia the Queen** in the northeast. This hazy band of light is the bulk of our disc-shaped galaxy, as we see it from within.

As you look towards Scorpius and Sagittarius, you are looking in the direction of the dense center of the Milky Way Galaxy. Scan with binoculars or a telescope in this area to find many faint star clusters and nebulae throughout this part of the sky.

Can You Find a 'New Star' in the Sky?

If you haven't already, soon you may see predictions of a star suddenly brightening in our night sky, a 'nova'. The star is called **T Coronae Borealis (TCrB)**, in the constellation of **Corona Borealis, the Northern Crown**. The constellation is visible in the evening sky during spring through mid-autumn. Right now, TCrB is far too dim to see with the unaided eye. Even under great conditions it's possible, if difficult, to spot it with a good backyard telescope. But sometime in the next few weeks, astronomers predict it will, for just a few days, shine as brightly as Polaris. It won't be blazingly bright, but it can easily spotted if you know where to look.

Visit adventuresci.org/blog to learn more about how to observe this rare sight!

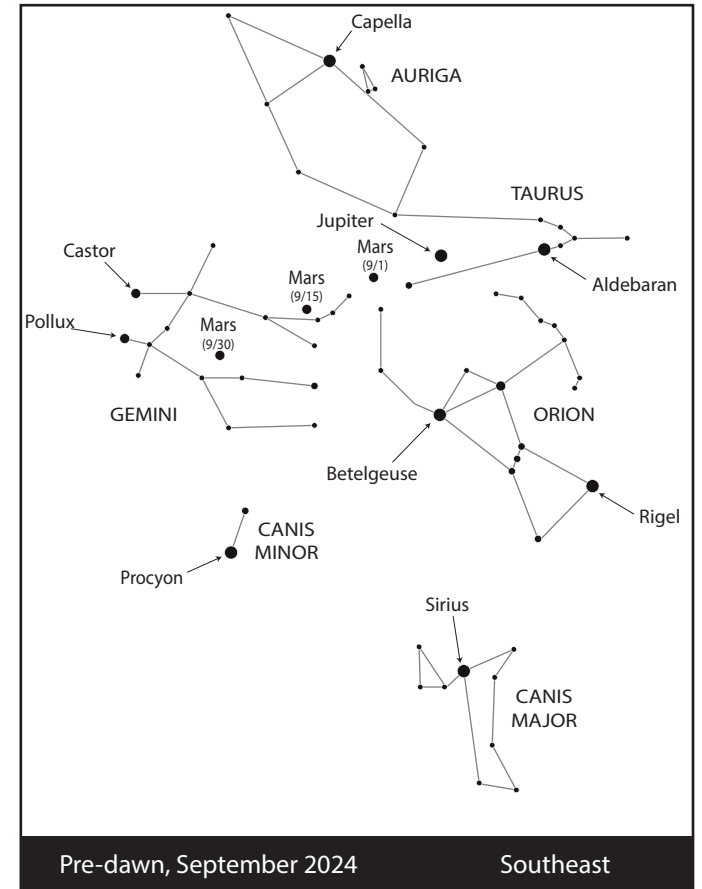
Early Morning

As the Earth orbits the Sun throughout the year, the constellations rise and set just a little bit earlier every day. You won't see much difference from night to night, but you will over the course of weeks or months. What we see in today's pre-dawn sky is a preview of the early evening sky in later months. Go out before dawn this month for a look ahead at the early winter night sky.

In the hours before dawn, Scorpius and most of the Summer Triangle have already set. Saturn is low in the southwest. Jupiter and red planet Mars are high in the east. Meanwhile, autumn constellations such as **Pegasus the Flying Horse** and **Andromeda the Princess** are high in the west. Winter constellations **Orion the Hunter** and **Taurus the Bull** are high in the southeast. Two bright planets plus all the bright stars of the winter sky? It might just be worth getting up early for!

Trying to find Polaris in the morning? You'll have a challenge on your hands if you look first for the Big Dipper: it and the rest of Ursa Major are now hiding near or below the northern horizon. Instead, locate W-shaped Cassiopeia high in the sky. The central peak of the W forms an arrow that points you in the direction of Polaris.

Before you set your alarm for the wee hours of the morning, consider planning out your observing. Desktop planetarium software like the free, open-source **Stellarium** (stellarium.org) can show you more precisely where night sky objects will be on any date and time, and help you plan ahead.



This Month in the Sudekum Planetarium

NIGHTWATCH

MARS STARS
THE ULTIMATE VOYAGE
THE POWERHOUSES OF THE UNIVERSE
NARRATED BY MARK HAMILL