

10:00 pm on February 1
 9:00 pm on February 15
 8:00 pm on March 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-31: The Andromeda Galaxy
- M-42: The Orion Nebula
- M-44: The Beehive Cluster
- M-45: The Pleiades open star cluster
- The Double Cluster in Perseus

Winter is here! The days are now getting longer and the nights shorter. This will continue until June 20, the longest day of the year and the first day of summer.

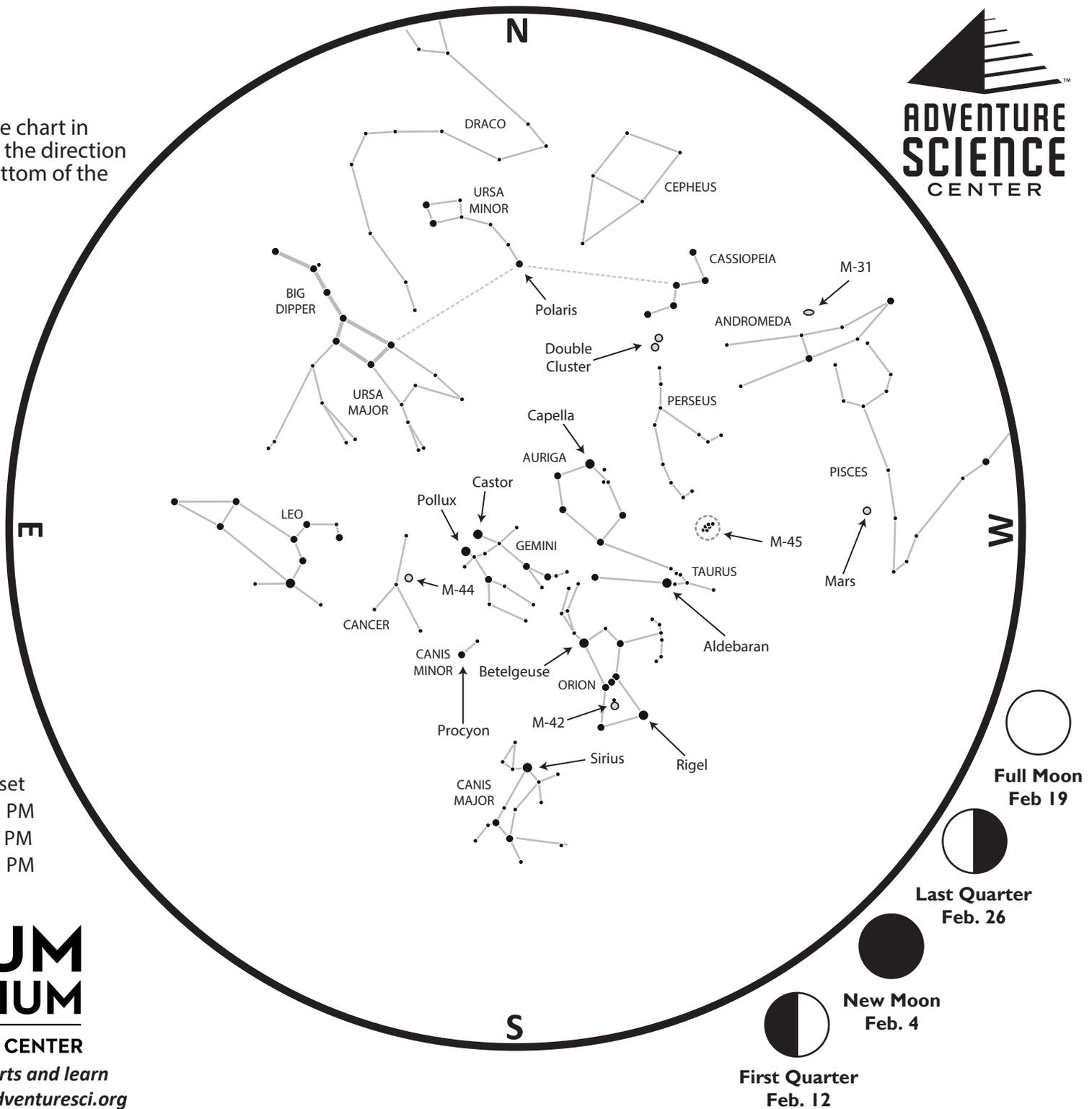
From Nashville:

	Sunrise	Sunset
Feb 1	6:49 AM	5:13 PM
Feb 15	6:35 AM	5:27 PM
Mar 1	6:18 AM	5:41 PM

SUDEKUM PLANETARIUM

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FEBRUARY 2019

After Sunset

The **Big Dipper** starts the evening low in the northwest, but will be high enough to easily see by 8 or 9 pm. Use the two stars at the end of the bowl of the Dipper to point you to **Polaris**, also known as the **North Star**. When you face Polaris, you're facing due north.

Polaris is not a particularly bright star, but it does remain fixed in the sky throughout the night and throughout the year. Polaris is at the end of the handle of the **Little Dipper**. This group of stars is officially known as **Ursa Minor the Little Bear**. The Big Dipper itself is officially **Ursa Major the Great Bear**.

While you're facing north, look for a group of five stars known as **Cassiopeia the Queen**. This group of stars can also help you find the North Star. The central peak of Cassiopeia's W-shape also points you in the direction of Polaris.

High in the south you can find the bright stars of the winter evening sky. The most famous and easily found constellation is **Orion the Hunter**. Look for the three stars in a straight line that mark his belt, the two stars that mark his shoulders, and the two stars of his feet. **Betelgeuse**, one of his shoulder stars, is distinctly red in color. Learn to find Orion, and he can direct you to many other sights of the winter sky.

Follow the belt stars up and to the right to find a "V"-shaped group of stars. At one end of the V-shape is a bright orange-red star called **Aldebaran**. The rest of the stars are part of a cluster called the **Hyades**. Aldebaran is not part of the Hyades itself. It just happens to sit in front of the star cluster, lining up in just the right spot. Together, Aldebaran and the Hyades mark the face of **Taurus the Bull**.

Look just past Aldebaran and you may see a grouping of stars called **M-45**, or the **Pleiades Star Cluster**. While your eyes alone may just see six or seven stars in this cluster, a pair of binoculars will reveal dozens of stars.

Follow Orion's belt down and to the left for the brightest star in the night sky, **Sirius**, in **Canis Major the Big Dog**.

Draw a line from Orion's blue-colored foot **Rigel** up through **Betelgeuse**, and keep on going until you run into **Gemini the Twins**. The bright stars **Castor** and **Pollux** mark the heads of the twins. Under dark skies you may just be able to pick out two stick-figure bodies leading back towards Orion.

Other bright stars to look for are **Capella** in **Auriga the Charioteer**, and **Procyon** in **Canis Minor the Small Dog**. These stars and constellations can be found using Orion as a guide.

Spring is still many weeks away but we can already see famous springtime constellation **Leo the Lion** high in the east after 9pm. Look for it beneath the bowl of the Big Dipper!

A Look Ahead

As 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 winter evening sky.

By morning, our winter constellations have set in the west, and even **Leo the Lion** is nearing the western horizon. Rising in the east are the three bright stars that make up the **Summer Triangle**.

Just before dawn, look to the southeastern horizon for **Jupiter** and **Venus**. Venus will be the brighter of the two planets. Jupiter will be above and to the right of Venus.

Venus will stay close to the horizon every morning through the spring, while Jupiter will rise earlier and earlier, on its way to becoming a great evening sight during the summer.

As the month continues, look for fainter **Saturn** to join the roster of morning planets. Venus will appear very close to Saturn on the mornings of the 16th through the 22nd. Just like Jupiter, Saturn will feature prominently in the summer evening sky.

On the morning of February 28 you can see, in a line stretching from low in the southeast to high in the south: Venus, Saturn, a thin crescent Moon, Jupiter, and the bright red star **Antares**.

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 your observing.

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.

Winter evenings are great for spotting the **Milky Way**, coursing from the south, high overhead through **Cassiopeia**, and on towards the northwest horizon.

Just beneath the belt of Orion is a faint patch of light that marks the hunter's sword. This is **M-42**, the **Great Orion Nebula**. A small telescope can reveal the overall shape of the nebula. A quartet of young stars near the center are called the **Trapezium**. These stars formed out of the gas and dust of the nebula.

Between Gemini and Leo lies the very faint constellation of **Cancer the Crab**. Shaped like an upside-down letter Y, none of its stars are visible except under very dark skies. Near the center of the Y is **M-44**, the **Beehive Cluster**. Like the **Pleiades** in **Taurus**, this **open star cluster** is a great target for binoculars.

Don't have a telescope? Don't know where to find dark skies? The next free public star party hosted by the **Barnard-Seyfert Astronomical Society** is scheduled for Friday, February 8 from 6:30 to 8:30 at **Bowie Nature Park** in Fairview. Come observe the Moon, Mars, the **Andromeda Galaxy**, the **Orion Nebula**, and more through telescopes provided by BSAS members. Dress warmly, in layers!

Visit the BSAS web site at bsasnashville.com for details. If the weather is bad, the star party will be canceled. Make sure to check their web site for updates before making the trip to a star party, especially if the weather is iffy. On the BSAS web site you'll also find driving directions and a list of future events.

This Month in the Sudekum Planetarium

February 9: Second Saturday

4:30pm Fulldome Feature:

Moon Taxi: Let the Record Play

5:30pm Fulldome Feature:

Kacey Musgraves: Golden Hour

6:30pm Fulldome Feature:

Aurora: Lights of Wonder

7:30pm The Beatles

8:30pm Led Zeppelin

9:30pm Pink Floyd: The Dark Side of the Moon



Full schedule at
adventuresci.org/sudekum-planetarium

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