

# THE CLEVELAND MUSEUM OF NATURAL HISTORY PRESENTS THE STARGAZER

November 2024

## THE OBSERVATORY

**A cosmic atlas is taking shape!** A brand-new image from the European Space Agency's Euclid Space Telescope has been released, showcasing an enormous mosaic of individual images from 260 observations made from March 25 through April 8, 2024. This stunning 208-gigapixel mosaic sheds light on the first 1% of data coming from Euclid and its survey of the sky. This telescope's mission is to observe and map one-

third of the sky beyond our Milky Way over the next six years, allowing us to better understand the nature of dark matter and dark energy. Its survey will create the largest 3D map of galaxies in our Universe through the observation of billions of galaxies over the span of 10 billion light-years. The telescope's first image was released on October 15, 2024, with more to come in March 2025.

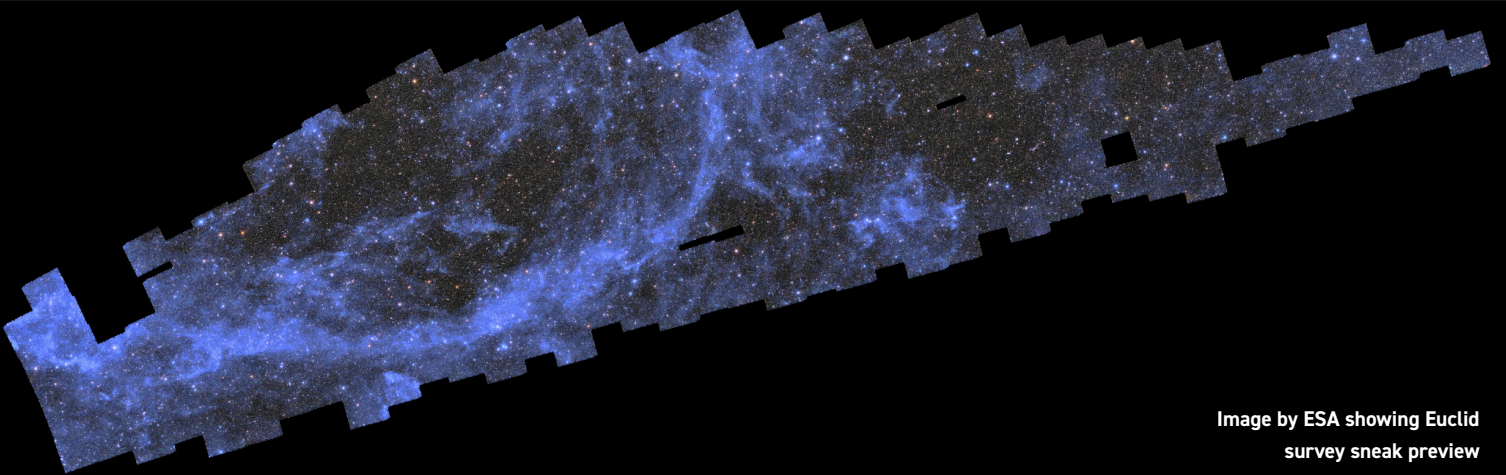


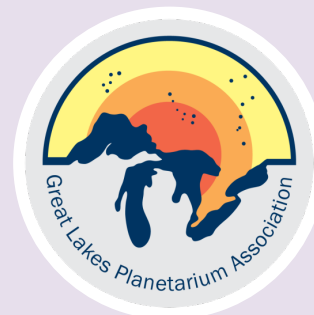
Image by ESA showing Euclid  
survey sneak preview

## SHAFRAN PLANETARIUM NEWS

**The Life of an Astronomer:** With the Cleveland Museum of Natural History just over a month away from its Grand Opening, our astronomers have been hard at work overseeing a major technological upgrade to the Nathan and Fannye Shafran Planetarium. Monica Marshall attended the Digistar Users Group conference to explore the latest advances in planetarium technology, while Destiny Thomas attended the Great Lakes Planetarium Association conference to present on the success

of the Museum's 2024 total solar eclipse celebration and to learn best practices from other planetarium staff. Both astronomers have brought back what they learned, and they can't wait to share the wonders of the cosmos with you under the dome. Until then, visit them at our Ask an Astronomer booth or in our portable planetarium. Ask an Astronomer will be hosted in the Visitor Hall on weekdays, from 11am to 2pm. Solar viewing will be offered in the Thelma and Kent H.

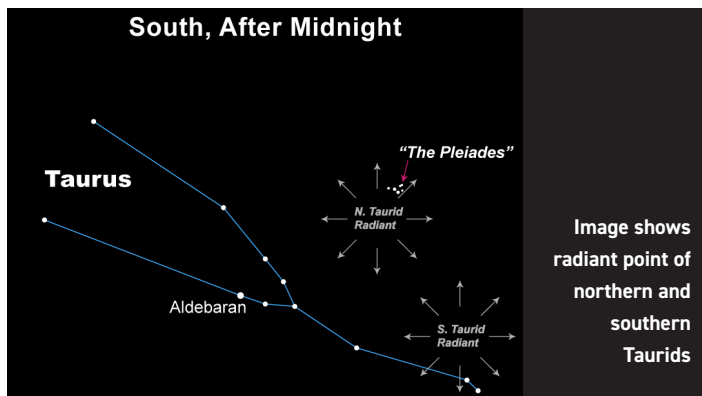
Smith Environmental Courtyard at high noon, weather permitting. The portable planetarium will be available on Saturdays and Sundays; ask for showtimes upon entry.



## PERIOD PANORAMA

In the month of November, the night sky has much to offer:

November 1: **New Moon.** Since the Moon will be located between the Earth and the Sun, the Moon will not be visible to us during this phase. But this is a great opportunity to observe faint deep-sky objects such as star clusters or distant galaxies.



November 4–5: **Southern Taurids Meteor Shower.** This meteor shower is one of two showers produced by Comet Encke. This comet left such a massive debris trail that it takes Earth a bit of time to travel all the way through it. The Southern Taurids will span September 7 to December 10, peaking on November 4–5. The shower is predicted to produce about five meteors per hour, with its radiant point (where the meteors appear to originate) located inside the constellation Taurus the Bull. Best viewing time: 7pm–midnight, toward the south.

November 9: **First quarter Moon.** Best viewing time: 7pm–midnight.

November 12–13: **Northern Taurids Meteor Shower.** This shower is the continuation of Earth's journey through the debris path of Comet Encke. Fireballs are famous for showing up during this shower, but moonlight from the waxing gibbous Moon will make it difficult to spot these meteors coming from Taurus the Bull. Best viewing time: Midnight–5am, toward the south.

November 15: **Full beaver supermoon.** This full Moon will be our fourth and final supermoon of 2024, reaching peak illumination at 4:29pm EST. Traditionally, the full Moon in November is nicknamed the "beaver Moon" to mark the time of year when beavers begin to take shelter for winter. In more recent times, this full Moon has been coined the "frost or freezing Moon," indicating winter is upon us.

November 16: On this night, **Mercury** will attain its highest point above the horizon in the evening sky as it reaches its greatest eastern elongation from the Sun. Look for this planet toward the western sky just after sunset.

Best viewing time: 5:45pm.

November 17–18: **Leonids Meteor Shower.** This meteor shower has produced some of the most beautiful and famous meteor storms in history. This shower results from the debris of comet 55P/Temple-Tuttle. Each year, this shower brings 10–15 meteors per hour. The Leonids are named for the constellation Leo the Lion. The shower's radiant point (where the meteors appear to originate) will be found near the lion's mane. Best viewing time: Midnight–5am.

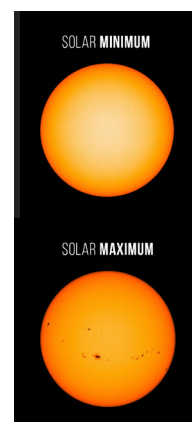
November 20: On this night, the **waning gibbous Moon** will appear close to the planet Mars, inside the constellation Cancer the Crab. Best viewing time: Midnight–6am.

November 22: **Last quarter Moon.** Best viewing time: Midnight–6am.

November 27: **Venus** will be our evening star for most of the month, shining bright toward the west as the Sun sets. Toward the end of the month, you will start to see Venus higher in the sky as it moves from the constellation Sagittarius the Archer to Capricornus the Sea Goat. Best viewing time: 6–7:30pm.

## LOOK AHEAD

NASA, NOAA, and the International Solar Cycle Prediction Panel announced on October 15 that the Sun has officially reached its solar maximum—the peak of its 11-year solar cycle. At this maximum, solar activity increases, resulting in the appearance of more sunspots on the Sun's surface and more dramatic solar weather. This peak will continue for another year, giving us an opportunity to learn more about our stellar companion and to understand how solar activity can affect life on Earth.



Comparison of solar minimum (December 2019) and solar maximum (May 2024) by NASA's Solar Dynamic Observatory

