

UNA Planetarium Newsletter

Vol. 2. No. 12 Dec,
2009

The year of astronomy ends this month. We have tried to bring good programs and activities to the local area and spark interest in the Universe outside the Earth. I have had the pleasure to work with the Shoals Symphony, the Art department and English department on projects along with outside groups like the Florence library and of course NASA. Hopefully the good collaborations with them will continue.

Many people will be thinking about perhaps getting someone a telescope for Christmas. I recommend actually getting them a star chart and a pair of binoculars until they know the sky. Let them learn to identify the constellations before buying something that can cost several hundred dollars for a good beginning instrument. You really don't need a telescope at all. Watching the changing patterns of the moon with planets and bright stars and the occasional meteor shower like the Geminids this month kept me going for years before I got a telescope. Do the same. The stars are for everyone!

For those interested I also recommend joining a club. Locally, the Shoals Astronomy club meets at the UNA Planetarium every month. Learning and sharing a love of the night sky with like-minded people is one of the great things about astronomy.

So goodbye year of astronomy, and wishing many more nights among the stars!

Mel Blake.

UNA Planetarium and Observatory, is
operated by the Dept. of Physics and Earth
Science

Image of the Month



The primary task of NASA's Swift mission is to search for gamma ray bursts, the most energetic explosions in the Universe. However, astronomers took advantage of its ultraviolet imaging capabilities to produce this image of the Andromeda galaxy. Ultraviolet (UV) energy is more energetic than the light you and I can see with our eyes and can harm biological tissues. Astronomers are interested in UV light because newborn massive stars produce enormous amounts of this light. As a result, this image shows thousands of newborn stars and star forming regions. This in turn helps us understand the environments in which new stars are created. The image here is about the same size as the full moon in the sky. The Andromeda galaxy is about 20 million light years away and can be seen with the unaided eye in a dark location. For more about the Swift mission go to http://www.nasa.gov/mission_pages/swift/main/index.html

Image courtesy NASA.

Astro Quote: *"Man looks aloft,
and with erected eyes
Beholds his hereditary skies."*
Ovid.

Planetarium tours start at 7:30PM.
Tours include a planetarium star
show, a video presentation and
observing through a telescope if
weather allows. \$3/person, UNA
students free. No reservations are
required.

Observing Highlights

The Geminid meteors peak on Dec
13/14 near midnight. These meteors
generally produce about 20 meteors
per hour. It is easy to observe all
evening on the night of Dec 13th
because Gemini is visible all night.



Calendar for Dec. 2009



Dec 1. Planetarium Public Night

Dec 8 Planetarium Public Night

Dec 10 365Days of Astronomy

Podcast. "Blue Star Blues"

Dec 13/14 Geminid Meteors Peak

Dec 15 Planetarium Public Night



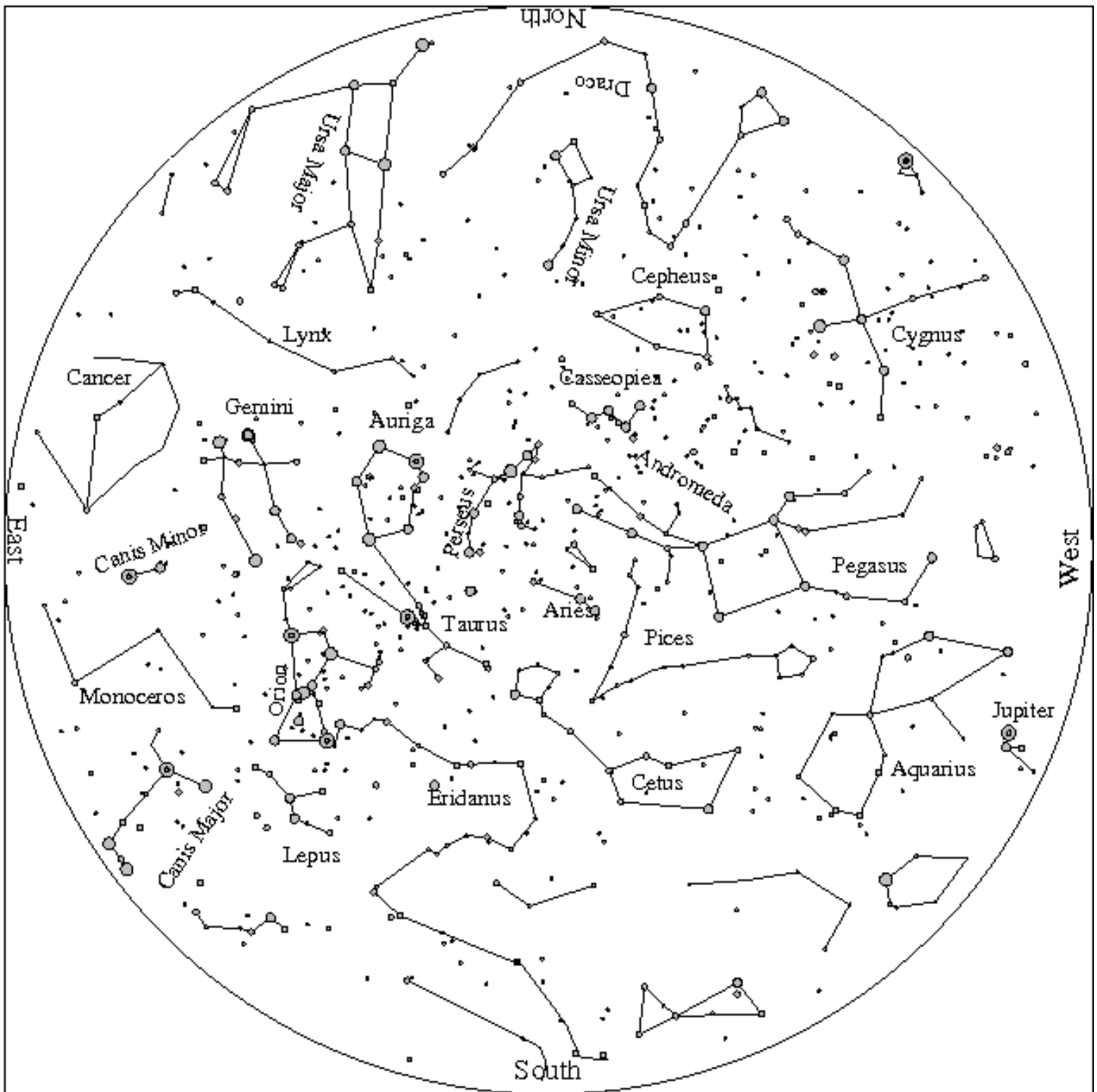
Dec 17 Star of Bethlehem Program

Dec 18 Star of Bethlehem Program

Dec 19 Star of Bethlehem Program



The December 2009 Sky for North Alabama



How to use this Chart: The sky is shown for 8:00PM, December 15th for Florence, Alabama. It will appear this way one hour earlier for each week difference in time. The stars brightness's are represented by different sized dots. The faintest stars you can see are the small dots; the brightest ones are large dots. Hold the chart with the direction you are facing down. So if you are facing north, hold the chart with north down. The circle represents the horizon and the center of the chart the point directly over your head. So an object half-way between the center and edge of the chart is half-way up in the sky. This chart was prepared using the SkyNow software of R. M. Blake. This chart may be reproduced for non-commercial purposes with the following acknowledgement included: Courtesy UNA Planetarium and Observatory. <http://www.una.edu/planetarium/>.

Halley's Comet

By Ashley Wills

With the first recorded sighting in 240 BC, Halley's comet forms an orbit every seventy-six years. The orbit of Halley is extremely elliptical. As it approaches the sun, it comes as close as 0.6 AU and as it moves away, it will reach a distance of roughly 35 AU. Although the comet has been seen by astronomers for generations, no scientist realized that the same comet was being seen until Edmond Halley in the eighteenth century when he was able to determine the orbit. It has a high velocity, and in 1910 was discovered to move through the solar system at 157,000 miles per hour.

The first recording of the comet was made by the Chinese and described a comet that moved through the sky moving north. Seventy-six years later, the passing of the comet was only recorded by the Babylonians. The comet has since been recorded by civilizations all over the world with all records always dating to the same time in history. However, throughout the years, the comet has been recorded by the Chinese more often than it has in any other country world-wide.

Halley's Comet is expected to pass by Earth in another fifty-two years. More specifically, astronomers predict that the comet will pass on July 28, 2061. This passage is expected to be noticeably brighter than the last passing in 1986.



Evolution of a Star

By Cara Depew.

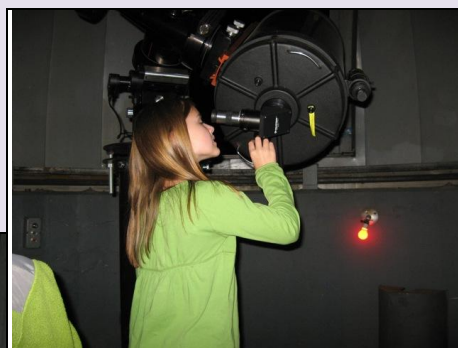
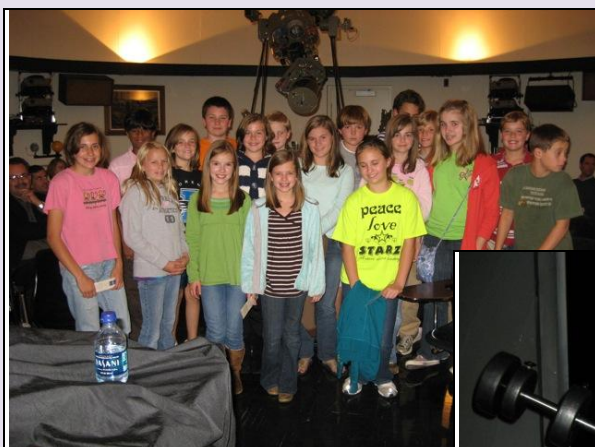
While the sun converts hydrogen to helium, the core will eventually run out of hydrogen. The core will then contract because it has no energy source, and it cools. The core eventually gets dense enough to a core completely made of helium, and a thin outer shell that fuses hydrogen. The envelope of the shell expands, and the star grows to become a "giant." The star then reaches a temperature suitable for the core to ignite, and convert helium into oxygen and carbon; after this stage, the star becomes a "red giant." When the star runs out of helium, it becomes a planetary nebula. The core undergoes one last contraction, and blows up into space. Finally, the star becomes a "white dwarf."



THE UNIVERSE
YOURS TO DISCOVER

INTERNATIONAL YEAR OF
ASTRONOMY
2009

The Grade 6 Class from Riverhill School Visited Nov 2nd.



UNA Participates in the 365 Days of Astronomy Project.

One of the key projects of the international year of astronomy is the 365 days of astronomy podcast series. The project committed to sending out a space related podcast every day of the year. A podcast is a downloadable audio file that can be played on a desktop, iPod, phone or other portable device that will play audio files. UNA contributed two podcast to this effort. The first was sent on Nov 29th. This was a collaboration with the Dept of English's Lesley Peterson, entitled "The Astronomy of Shakespeare". It is still available for those who missed it, along with all of the year's podcasts. The second podcast will be podcast on December 10th, and entitled "Blue Star Blues". It is about massive stars, including their short lives and their importance in seeding the Galaxy with elements needed for life. This was an effort with Cara Depew and Ashley Wills, two honors students at UNA. They helped write and produce the podcast. Two examples of UNA's best and brightest. I hope you take the time to listen to these podcasts and the others that are part of the series. Many thanks to Kris Robertson for the help with the recordings!