UNA Planetarium Newsletter

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The fact that the sky is dark at night is one of the more profound observations you can make. Hidden in this simple observation is a clue to the nature of our universe. We start out with our understanding of light. Light travels through a vacuum at a speed of about 300000km/s. What this means is that every time you open your eyes you are seeing objects not as they are, but as they were. Some finite time has passed since the light left the object you are seeing. Normally the time delay is small but under cosmic distances they are significant.

Now let us imagine a universe randomly populated with galaxies. If the universe were infinitely big, then eventually every direction you looked would have a galaxy there. Placing them randomly over the sky would cover the whole sky. If the universe were also infinitely old, then we could see all these galaxies and the sky would be covered in light. This is called Olber's paradox. We don't see this because the universe is not infinitely old. The light from the most distant galaxies hasn't had time to get here. So there are regions of the sky where there is no light – the sky is dark! This means that the universe we live in cannot be both infinitely old and infinitely large. We know from the Hubble expansion of the universe that there is a finite age to our cosmos. This solves the paradox.

We are filling the sky with light of our own from streetlights and development. As we celebrate Earth day we can hope for dark night skies to inspire even greater understanding about our universe.

Mel Blake.

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

Image of the Month

This image combines data from NASA's Spitzer Space Telescope, which operates in infrared light, with Europe's Hershel space telescope to which NASA also contributes. The image shows stars forming in the Orion nebula, which is visible in binoculars or small telescopes below the belt of Orion. Young stars become enshrouded in dust and gas as they form which can spin to form a disk. These disks show up as bright red dots near the top right on this image. The disks may eventually form planets. The nebula is about 1500 light years away. **The Image courtesv NASA and ESA.**

Astro Quote:

"*For my part I know nothing with any certainty but the sight of the stars makes me dream.*" Vincent Van Gogh.

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

Venus and Jupiter remain in the east after sunset.

Look for Mars sits in the southeast just after sunset this month.

Saturn lies low in the east around 8PM

The Lyrid meteor shower will take place April 22nd.

Calendar for April 2012

April 17 Planetarium Public Night

April 20 Planetarium Public Night

April 21 Earth Day

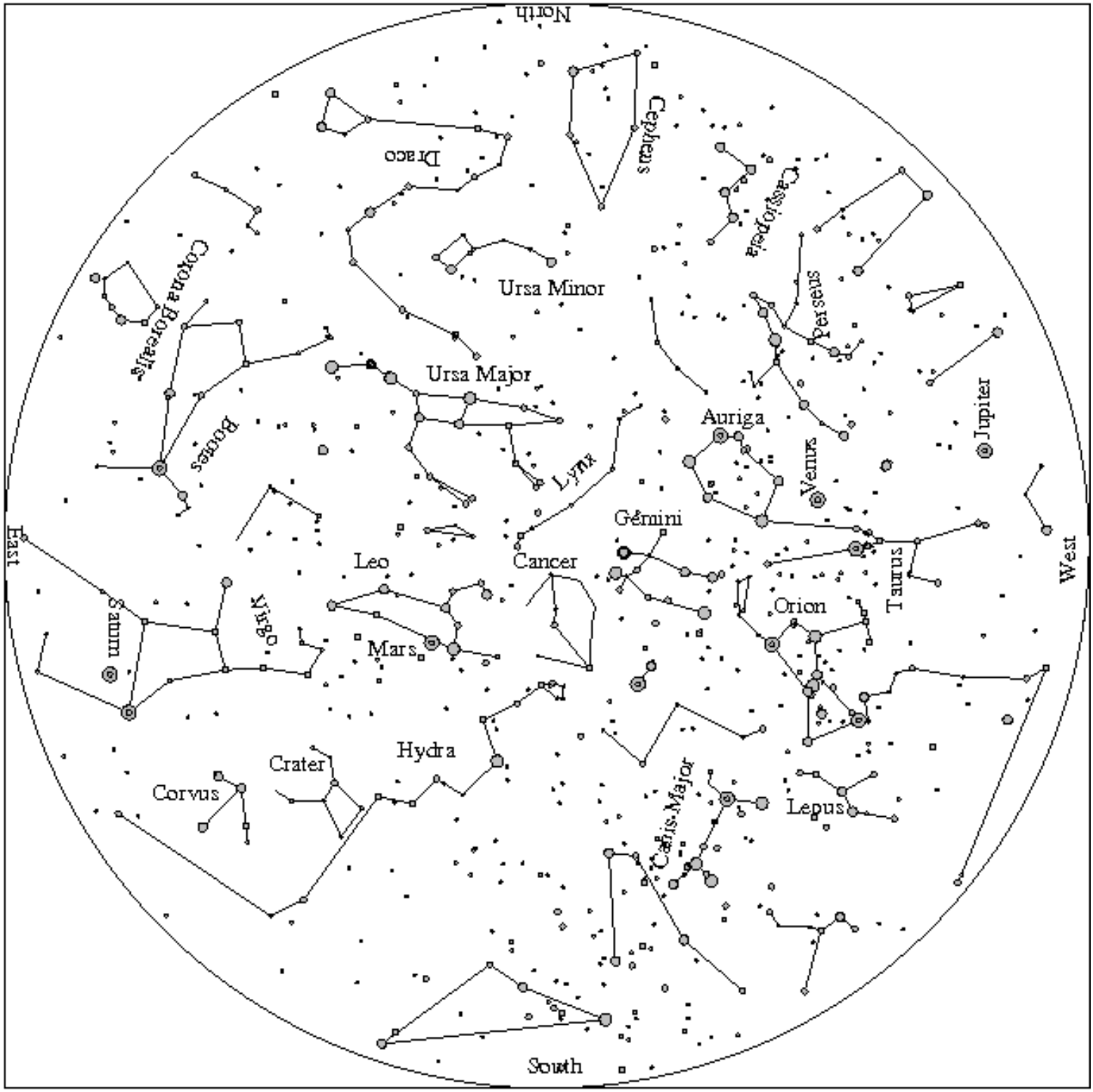
April 22 Lyrid Meteors peak

April 24 Planetarium Public Night

April 26 Shoals Astronomy Club Meeting

April 27 Planetarium Public Night

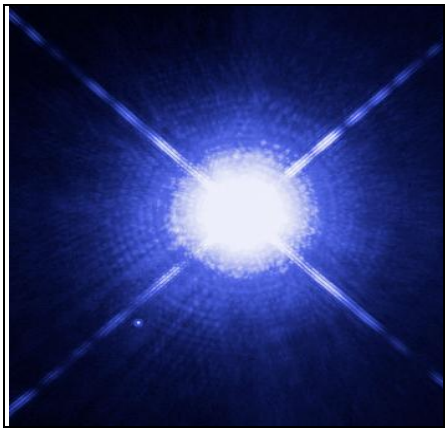
The April 2012 Sky for Northern Alabama



How to use this Chart: The sky is shown for 8:00PM, April 17th 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/.

UNA Planetarium Participates in 365 Days of Astronomy

365 Days of Astronomy is an international outreach project which teaches the public about all areas of astronomy. The subscribers sign up to receive a podcast at no charge. They then receive a "podcast" which consists of short 5 – 10 minute discussion of some topic related to astronomy. Topics range from how to pick out a telescope, the nature of stars and how galaxies form and everything in between. The podcasts are intended for all ages. UNA Planetarium will contribute for podcasts to 356 Days of Astronomy. Our third podcast will be on April 18th on the subject of binary stars. We will contribute another in May. Work study student Deb Bailey will be helping with this project. The image at right shows Sirius A (bright star) and Sirius B (the faint star on the bottom left) viewed by the Hubble Space telescope. For more information about 365 Days of Astronomy go to their website. http://365daysofastronomy.org/



Observing the Lyrids

Every once in a while the Earth passes through the debris left behind by a comet as it passes close to the Sun, ejecting gas and dust into space as it heats up. The bits of dust burn up in the atmosphere and cause the flashes of light that we call meteors, or sometimes shooting stars. On the night of April 21/22, the Earth will travel through the path of the comet Thatcher. This will result in the Lyrid meteor shower. It is a weak shower in the sense that about 10 – 15 meteors per hour will be seen in a dark location, as opposed to sometimes a hundred for showers like the Geminids in December. However, from time to time the Lyrid meteors have been known to show up to a hundred per hour. This year favors the Lyrids since it will be new Moon when the shower reaches its peak. The meteors seem to stream from a point near the bright star Vega which will be low in the northeast after midnight. You should sweep you gaze in a brad area rather than stare at this one spot. The best time to observe will be between midnight and dawn on April 22.

Shoals Earth Day Fest 2012

UNA Planetarium will participate in Shoals Earth Day, on Saturday, April 21. Join us at Colbert County Courthouse in Tuscumbia for the celebration. We will be educating people about light pollution and if weather allows have a solar telescope for viewing the Sun.

http://www.alabamarivers.org/events/special-events/5th-annual-shoals-earth-day-fest/view

NASA's MicroObservatory Robotic Telescope Network

NASA has developed a set of internet-accessible telescopes for the public to use for observing the night sky. Just as astronomers use orbiting observatories to collect data, anyone can now access NASA's MicroObservatory Robotic Telescope Network. The telescopes are stationed. Observers control the telescopes themselves and get images taken for them for projects as diverse as the solar system to galaxies. There is no charge and anyone with an email address can participate! Students can create color images using the processing software and study objects from their own data. The Facebook and Internet links are given below.

http://mo-www.cfa.harvard.edu/OWN/index.html

http://www.facebook.com/MicroObservatory

Image from NASA.