

Challenger
LEARNING CENTER
of Hardin County



Jefferson
Community College

The Otter Creek Astronomical Observatory

The Observer

May 2005 (#2)

Upcoming Public Programs at Otter Creek Observatory

Evening Programs -- Join the observatory staff for a tour of what is visible in the night sky, including the moon, stars, and planets.

All evening programs are "weather permitting"--if the sky is not clear enough for celestial objects to be visible the observatory will not be open.

May 14, 2005 – 9:00 to 11:00 pm EDT

June 4, 2005 – 9:30 to 11:30 pm EDT
Note – this will be a "moonless night" program.

Daytime (solar) Programs -- Daytime programs are "open house" at the observatory. Come safely observe of the Sun, with its prominences and sunspots. Walk the model solar system trail and get a sense of the size of things in space. And learn about the observatory -- after all, you can't really see what's in the observatory when it is dark.

Daytime programs are held "rain or shine"--the observatory is open regardless of weather.

May 28, 2005 – 11:00 am – 1:00 pm EDT

June 25, 2005 – 11:00 am – 1:00 pm EDT

July 9, 2005 – 11:00 am – 1:00 pm EDT
Otter Creek Park Summerfest

Summerfest & Threshing Days Festival at Otter Creek Park 07/09/05 & 07/10/05 Saturday and Sunday 10AM - 5PM

Otter Creek Park will have a couple of fun filled days of activities and entertainment the whole family will enjoy. There will be antique steam engines and tractors, live music, arts and craft vendors, food, children's games, adventure activities, and much more, including a solar program at the observatory on the 9th. For more information contact the Park Office at 502-574-4583.

"Moonless Night" Observatory Programs

Most public night programs are held when there is a 1st-quarter moon visible, because for the casual visitor the Moon is one of the most spectacular objects in the night sky. Also, it is relatively easy for children to see through a telescope. However, during the

summer we offer “Moonless Night” programs for those who are interested in observing under a dark sky. These programs feature more “deep sky” objects such as galaxies and nebulae that are fainter and more challenging to observe.

What’s a Planet, anyway?

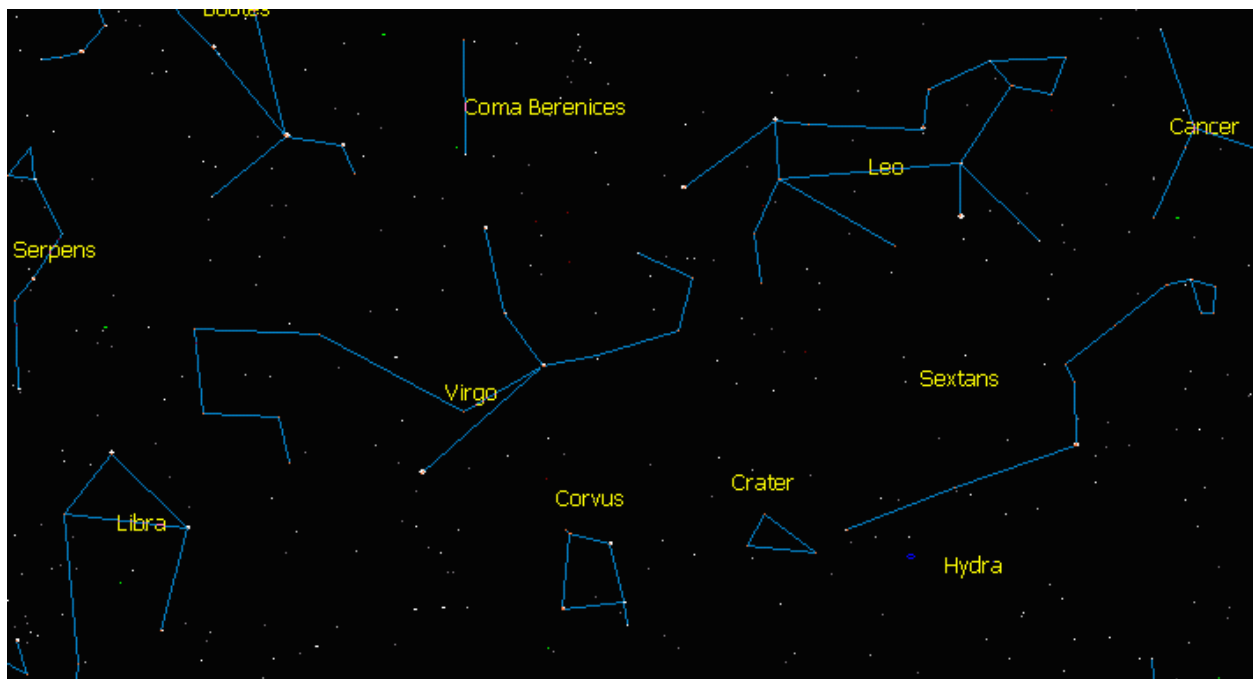
When people think of a “planet” they think of a big, round world in space, sort of like the picture of Jupiter (with one of its moons) shown here. However, humankind has known of the existence of Jupiter, and several other planets (Mercury, Venus, Mars, and Saturn), since ancient times. People knew Jupiter long before there were space probes to visit it, or cameras to photograph it, or even telescopes to look at it. For most of the time people have known Jupiter, they’ve known it to be simply a light in the sky – a bright “star”.



<http://antwrp.gsfc.nasa.gov/apod/ap010808.html>
Credit: Cassini Imaging Team, Cassini Project, NASA

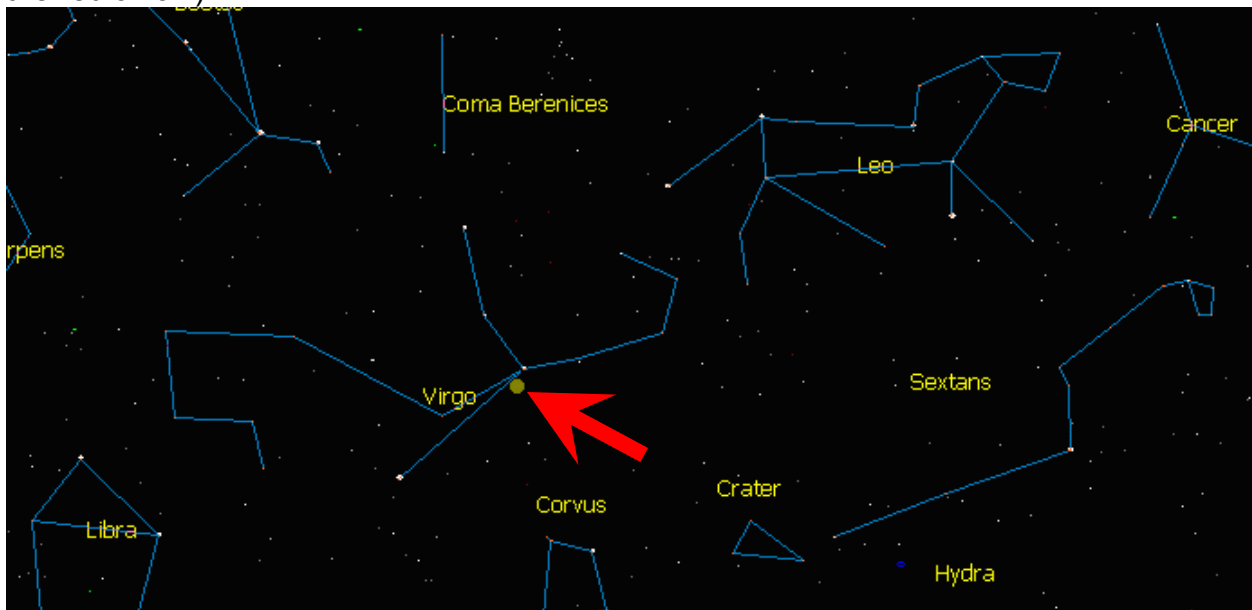
So how did they recognize Jupiter and the other planets? Are planets bright? Jupiter is, and so is Venus, but Saturn and Mercury are not particularly bright and Mars is sometimes bright and sometimes not. Do planets look different from the stars? Some people say that planets twinkle less than stars, and in theory that’s true. However, twinkling is caused by the air. Stars themselves can twinkle more or less depending on where they are in the sky and depending on the weather. Neither twinkling nor brightness is a reliable way to recognize a planet.

No, the way people recognized that the planets were different from the stars is because they moved among the stars. Below is a map of part of the sky that is overhead in the evening at this time of year. The map shows constellations such as Leo (the lion),

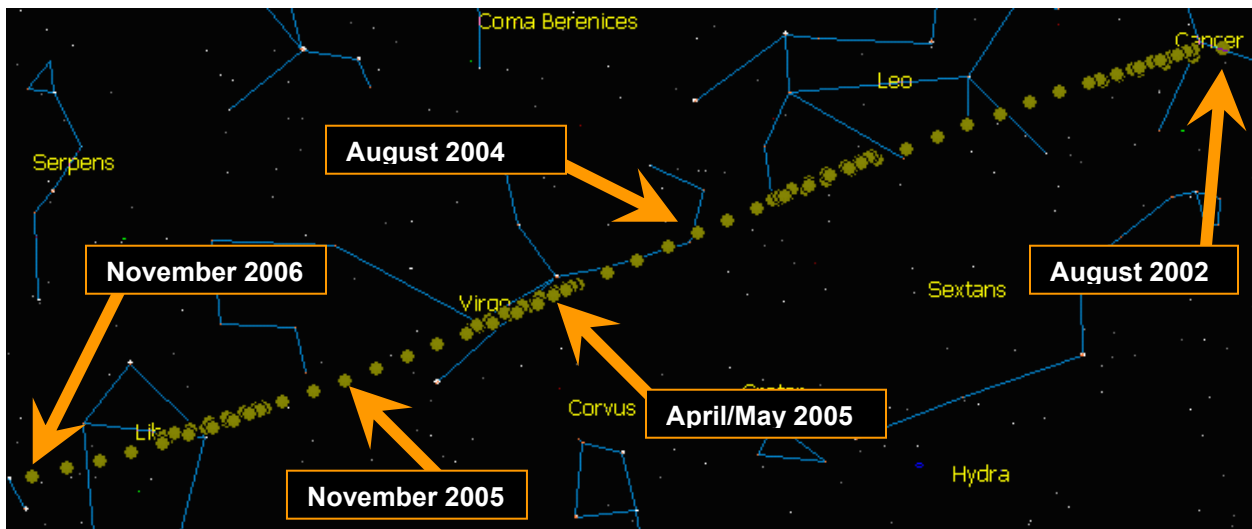


Corvus (the crow), and Libra (the scales). On a scale of human history, these stars are unchanging. If you walk out and see Leo with its bright star Regulus, you are seeing the same stars, that George and Martha Washington saw 250 years ago when they looked up in the late spring; the same stars William the Conqueror saw 1000 years ago when he looked up; the same stars Jesus Christ saw 2000 years ago when he looked up; the same stars Tutankhamen saw 3000 years ago when he looked up. Yes, all of those people saw the same stars, in the same patterns, as you see now. The stars rise and set but, over time-spans of even centuries, they keep the same positions relative to each other.

However, there is one thing that is different today that is not on the previous map. It is shown in the map below. In the constellation Virgo there is currently an extra “star” – in this case a very bright one. This is actually not a star at all – it is Jupiter (indicated by the red arrow).



In fact, Jupiter has been traveling through this part of the sky for a while now. The map below shows where Jupiter has been every two weeks, starting in August of 2002.



Unlike the stars, Jupiter doesn't hold its position. It wanders among the stars. (In fact, according to the National Air and Space Museum, our word "planet" comes from the Greek word *planetes*, meaning "wanderer".) Note that this wandering is not a dramatic movement. If you watched Jupiter all night long you would not see any significant motion. However, if you watch over a period of weeks and months, you can see the change.

Mars, Mercury, Saturn, and Venus also "wander" much like Jupiter does. (So do Uranus, Neptune, and Pluto, but they can't be seen without a telescope.) It is this wandering that distinguishes the planets from the stars if you don't have telescopes, cameras, and space probes.

Activity for family, friends, or classes:

Use the sky chart that is included to keep track of Jupiter's position over the course of the summer. Try marking Jupiter's location on the chart, and writing down the date of your observation. See if you can see the changes. You only need to make an observation every couple of weeks or so.

Visit the Otter Creek Observatory web page at

www.ottercreekpark.org

