The Otter Creek Astronomical Observatory

The Observer

February 2009 (#18)

Upcoming Evening Programs at South Harrison Park observatory:

February 7 (6:30 – 8:30 pm)
March 7 (7:30 – 9:30 pm)

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

All times are Eastern time zone. 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. Nighttime programs are subject to change based on ball field schedules.

Upcoming Daytime (solar) Programs at South Harrison Park observatory:

February 21
March 21

Daytime programs are "open house" at the observatory. Come safely observe the Sun, with its prominences and sunspots. Check out our telescopes and learn about the observatory -- after all, you can't really see what's in the observatory when it is dark. *Daytime programs begin at 11 AM. All times are Eastern time zone. Daytime programs are held "rain or shine" -- the observatory is open regardless of weather.*

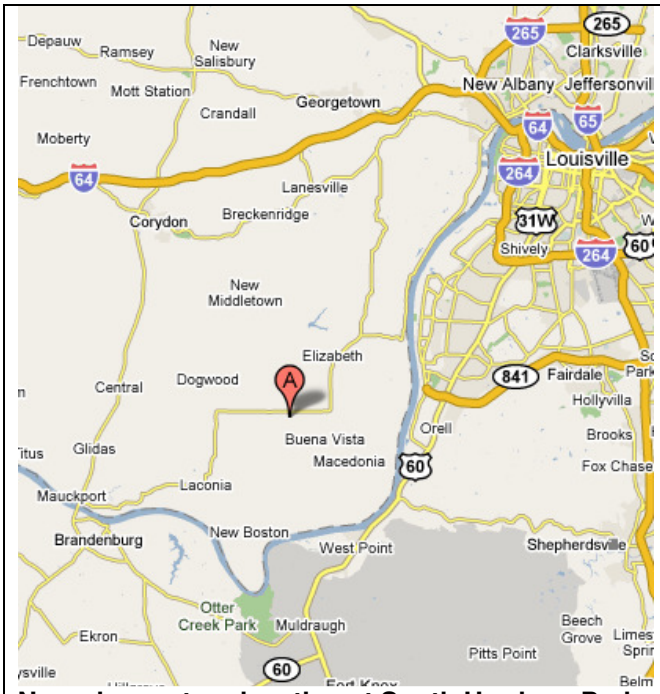
Check with Park Astronomer or Park office for updates: Park Astronomer (Henry Sipes) – 270-668-2103; Harrison County Park Office – 812-738-8236

Visit the Otter Creek Observatory web page at

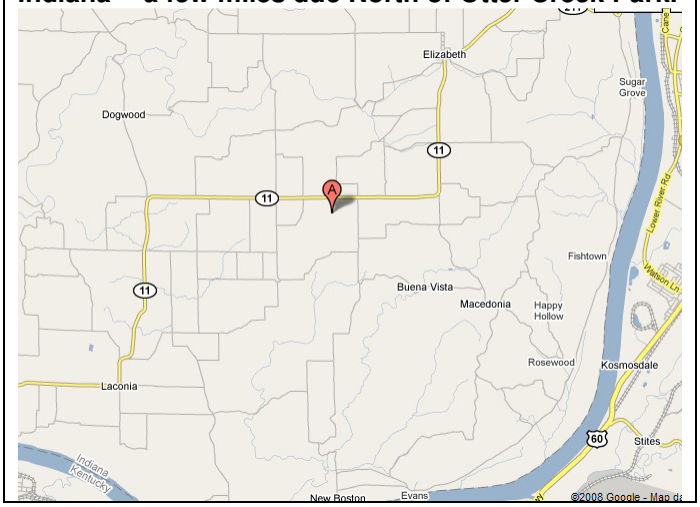
www.jefferson.kctcs.edu/observatory

Update on the Status of Otter Creek Observatory

Things are progressing well with the new South Harrison observatory. As you can see from this newsletter, we once again have a regular schedule of public programs. At the moment Harrison is operating with limited equipment as a few bureaucratic paperwork hurdles remain to be cleared before equipment from the Otter Creek location can be moved to Harrison. However, the paperwork is moving along -- it is just moving slowly.



New observatory location at South Harrison Park, on Indiana 11 between Laconia and Elizabeth, Indiana -- a few miles due North of Otter Creek Park.



So what will Otter Creek Observatory look like when the ink is dry and all equipment is moved? There will be two locations -- the facility at Otter Creek and the facility at South Harrison. The Otter Creek facility will be used by Jefferson Community & Technical College personnel for activities such as research projects, special class activities, and professional development. The Otter Creek facility will not be open to the general public so long as Otter Creek Park is not open to the general public. Public programs of all sorts will be held at the South Harrison facility. Most of the activities that used to go on at Otter Creek will now take place at South Harrison. We will soon make major changes to the Otter Creek Observatory web page to reflect all these changes.

The closing of Otter Creek Park has temporarily disrupted the operations of Otter Creek Observatory. However, that closing has resulted in the growth of Otter Creek Observatory -- with more facilities, more equipment, and more to offer to the Louisville region in the way of astronomy. Otter Creek Observatory will consist of a public facility at South Harrison Park and a college-only facility at Otter Creek Park. We hope you come to visit the South Harrison observatory soon -- and if you take a course in

astronomy at Jefferson Community & Technical College, perhaps you'll visit the Otter Creek observatory as well!

Directions to South Harrison Park (for those who which to map this on the internet, the address is South Harrison Park Dr SE Laconia, IN 47135).

From Louisville:
Take I-64 West out of Louisville, getting off at Indiana 111 (the route to the casino boat). Follow IN-111 for 12.1 mi, going past the casino boat, until you reach Indiana 211. Turn right at IN-211 and go 2.0 mi until you reach Indiana 11. Follow IN-11 for 1.7 miles into the town of Elizabeth. In Elizabeth IN-11 will turn left. Continue to follow IN-11 for 4.6 mi. Turn left at S Harrison Park Drive -- there will be signs for South Harrison Park.

From Brandenburg:
Cross the Ohio River bridge at Brandenburg and then take Indiana 11. Follow IN-11 for 7.1 miles to S Harrison Park Drive. Turn right -- there will be signs for South Harrison Park.

How Did They Know That?

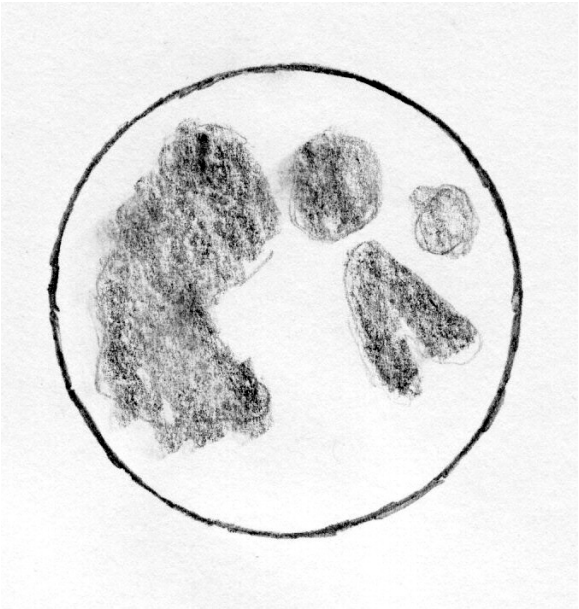
THE UNIVERSE
YOURS TO DISCOVER

INTERNATIONAL YEAR OF
ASTRONOMY
2009

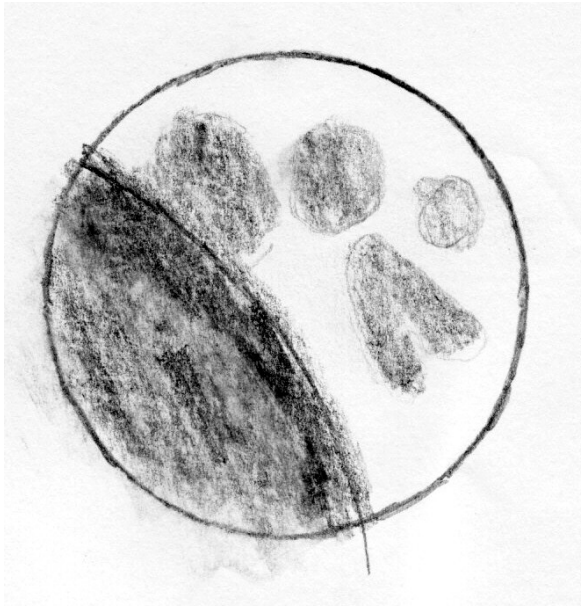
As part of the IYA 2009, this newsletter is going to include some basic explanations of how early astronomers knew basic things about the heavens -- and how you can figure them out, too. In the last issue of the *Observer* we addressed how can you tell that the moon is much closer to Earth than the sun. In this issue we will discuss how you can tell that the Earth is round.

Somewhere you might have learned that people used to think the world was flat. Well, that's really not true -- at least not insofar as science goes. People have known the Earth is round for millennia. For example, the Greek scientist Aristotle lived almost 2500 years ago and he knew the Earth was round. How did they know that?

It isn't really that hard to see for yourself that Earth is round. For example, if you have ever seen an eclipse of the moon (when the full moon passes through Earth's shadow) you probably noticed that the Earth's shadow is round. That would indicate that the Earth is round -- round objects cast round shadows.

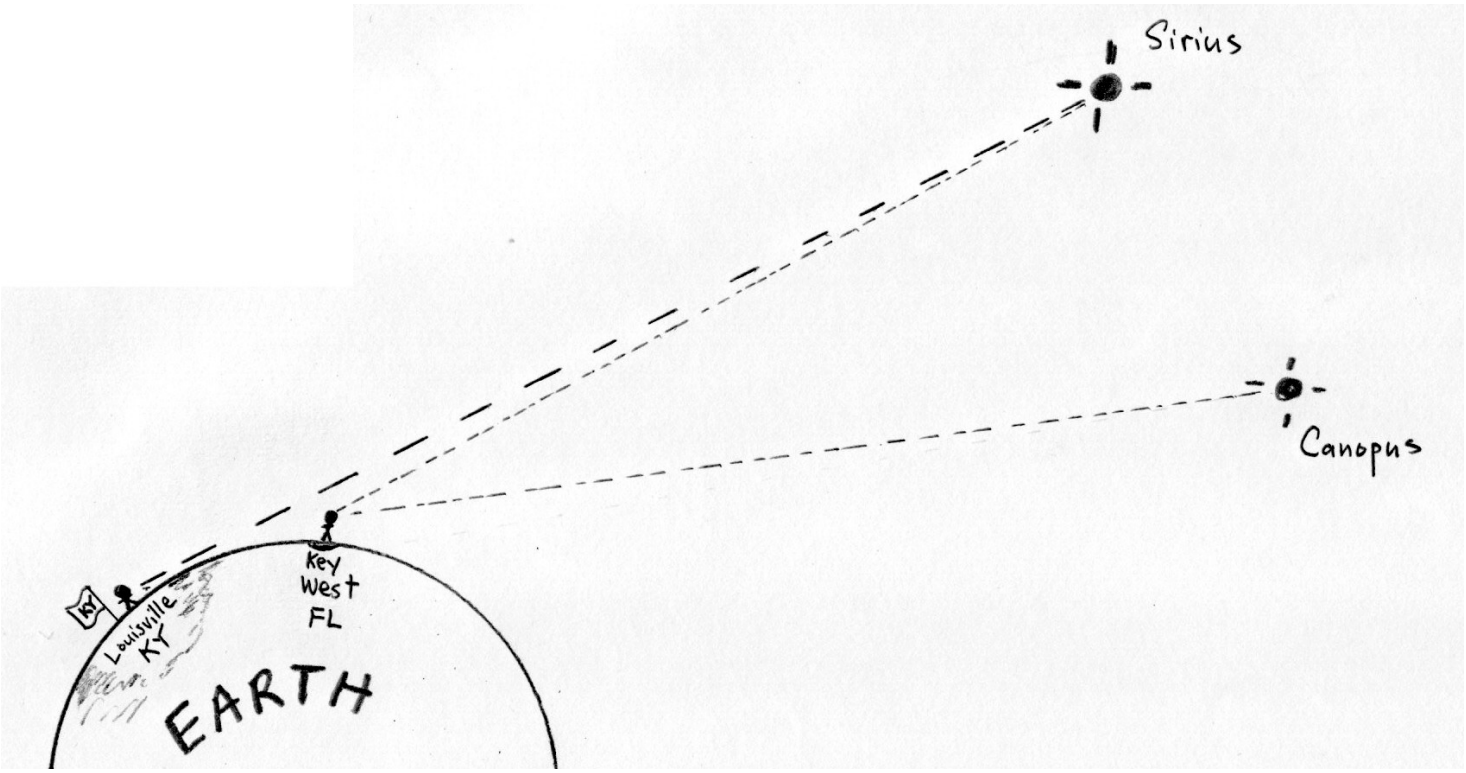


The full moon.

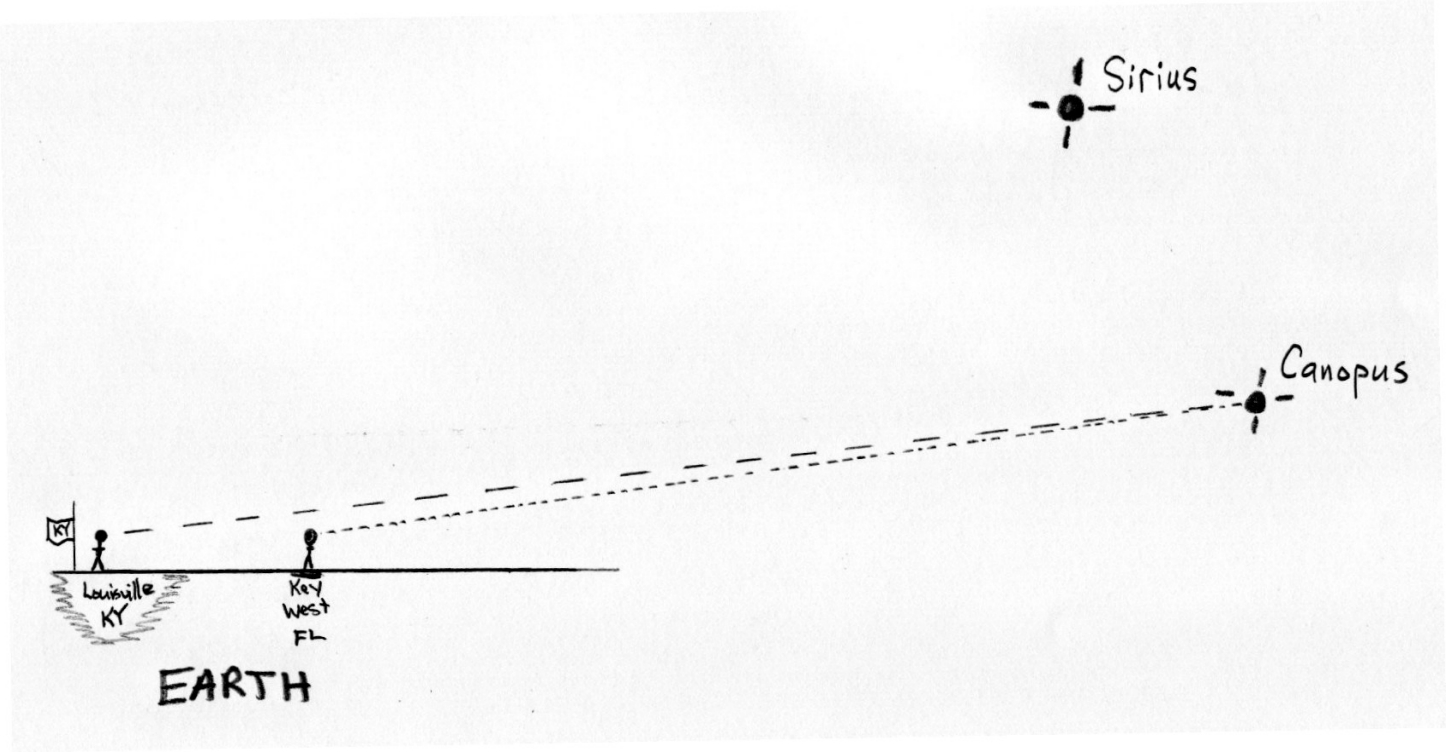


The full moon starting to pass into Earth's shadow during an eclipse of the moon. The Earth's shadow is round, indicating that the object casting the shadow (the Earth) is also round.

As another example, if you travel south stars appear above the horizon that are not visible further north. In the winter skies of Louisville, Kentucky, the star Sirius reigns unchallenged. It is the brightest star visible in the night sky. But a “snowbird” who travels from Louisville to Key West Florida will see a distinct change in the night sky. As seen from Key West, Sirius has a challenger, the brilliant star Canopus, visible just below Sirius. It is the fact that the snowbird is moving around the curve of the Earth that causes new stars to appear during travel to the north or south. If the Earth were flat then everyone everywhere would basically see the same stars. The Greeks of Aristotle's day did not travel between Kentucky and Florida, but they traveled enough to notice this phenomenon. You actually can see changes in the stars by traveling just a couple of hundred miles north or south.

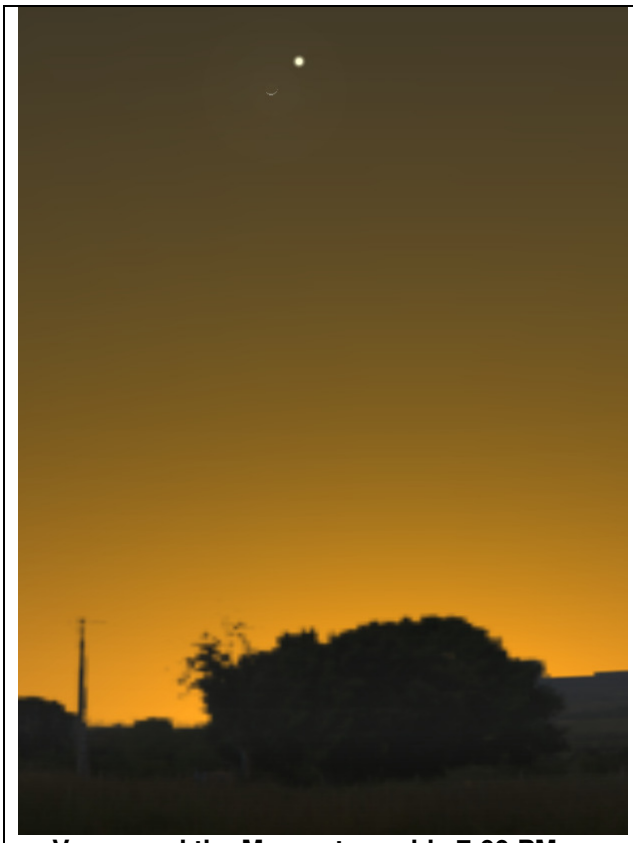


When in Kentucky a traveler can see Sirius, but she cannot see Canopus because the Earth blocks her line of sight. When she is Key West, Florida, however, she can see both Sirius and Canopus.



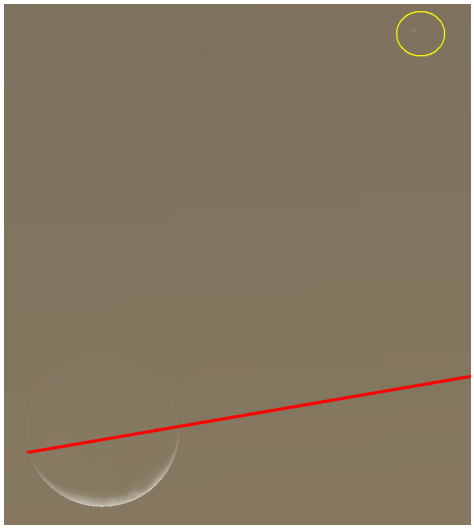
If the Earth were flat, then the traveler could see Canopus from both Kentucky and Florida.

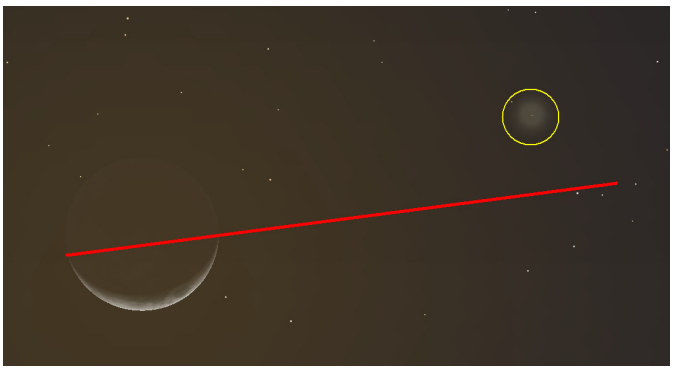
Watch Venus and the Moon in Late February.



Venus and the Moon at roughly 7:00 PM on February 27.

Venus and the Moon get together on the evening of February 27. Look to the west after sunset and you will see these two celestial objects -- the two brightest objects visible in the night sky -- very close to one another. Both the Moon and Venus move against the background of the stars, but the Moon's motion is much more rapid that Venus's. Can you notice that their relative positions change just over the course of the evening? If you really want to get into this, start looking for the moon before the sun sets. When you see it, note where Venus is compared to the Moon's crescent. Note the time, too. Now go out and check on the Moon and Venus during the course of the evening. In a couple of hours the Moon's motion becomes apparent. The moon is moving such that the dark portion of the Moon is leading. Venus starts the evening being “behind” the lunar crescent, but thanks to the Moon's motion, Venus ends the evening being almost even with it. All the images shown here are simulations made with the computer program *Stellarium*.





Left -- the Moon and Venus at about 6:30 PM. Right -- the Moon and Venus two hours later. Note how the relative positions of the two have changed. Can you see this for yourself?