

The December Sky

Comets are ephemeral and unpredictable creatures. They are dusty snowballs that become visible as they approach the Sun. A comet's apparent brightness depends on the rate at which it evaporates, its distance from the Sun, its distance from the Earth, and the comet-Sun-Earth angle. Still, sometimes the luminosity estimates are correct and a comet's brightness *can* be predicted. Such it will be, we hope, with [Comet Wirtanen, 46/P](#).

Comet Wirtanen is near its 14th [perihelion](#) since being discovered in 1948. It belongs to a "family" of comets associated with Jupiter (there are more than 500 of them known). Jupiter's family have their [aphelia](#) near the orbit of Jupiter. At its perihelion the comet is about the same distance from the Sun as Earth (1 [AU](#)). At that distance, the Sun provides power at the rate of more than 1,000 Watts per square meter, plenty of energy to evaporate the outer layers to form a tail of [fluorescent gas and reflecting dust](#).

While considered a [Near Earth Object](#), at present 46/P cannot get any closer than 25 times our distance from the Moon ([LD](#)). On this trip, 46/P will close to within 30 LDs and that's why it could be bright enough to see with your naked eye from a dark site: it's nearby.

You can find wide and narrow field finder charts and its predicted brightness vs. date [here](#). Note that smaller magnitudes are brighter. Each magnitude is a factor of ~2.5.

The equation used to predict the comet's brightness can be found [here](#). Other data and a really cool interactive orbit diagram of the comet and solar system is [here](#).

You will find an [all-sky finder chart](#) that includes 46/P [at our web site](#).

UK MacAdam STUDENT OBSERVATORY

UK's MacAdam Student Observatory, designed and built in 2007, was officially opened in 2008. The Observatory is located atop Parking Structure #2 between the W.T. Young Library and the Chemistry-Physics Building, and its dome houses a high-quality 20-inch reflecting telescope plus a variety of state-of-the-art optical instruments. The Observatory is dedicated to serving UK students as well as astronomy enthusiasts of every age and experience level throughout Kentucky.

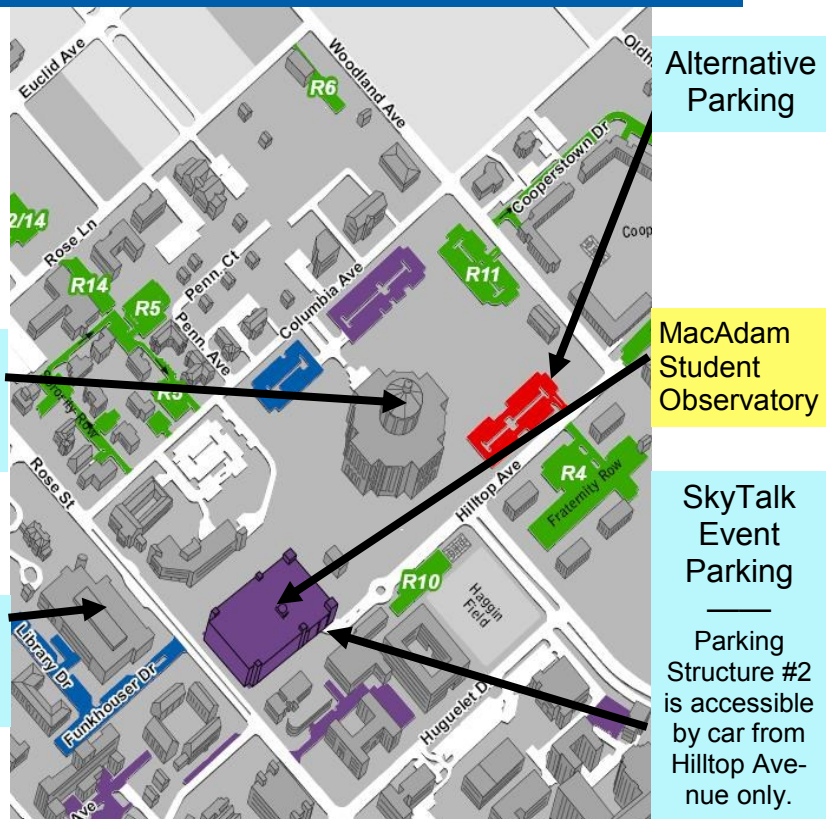
Are you interested in informal talks on astronomy and astrophysics? Are you curious about telescope design and operation? Would you care to take a look through the eyepiece?

The Department of Physics & Astronomy in UK's College of Arts & Sciences welcomes you! Join us to experience the excitement of stargazing through a powerful telescope. An up-to-date calendar of events can be found on our website:

<https://pa.as.uky.edu/observatory>



How to find the MacAdam Student Observatory



W.T. Young Library

Chemistry/ Physics Building

Alternative Parking

MacAdam Student Observatory

SkyTalk Event Parking

Parking Structure #2 is accessible by car from Hilltop Avenue only.

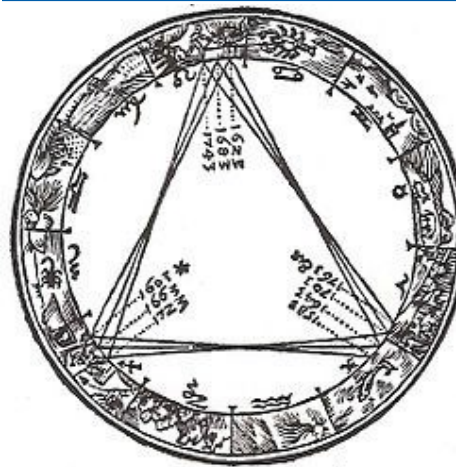
Monthly Meetings

The MSO hosts monthly public-observing sessions, each with a kick-off 40 minute presentation in the Chemistry-Physics Building. The presentations will take place even on cloudy nights. If the sky is clear, the observatory will open after the talk! Can't make the SkyTalk? Then come after!

Next month:

January 10, 2019 - **7:00 PM** - Chem-Phys Room 155
Da Bi — University of Kentucky

Kentucky SkyTalk



Kepler's Trigon from *De Stella Nova in Pede Serpentarii*, published in 1606. The title refers to the last naked-eye supernova seen in the Milky Way. The diagram depicts close encounters between Saturn and Jupiter that occur at roughly 20 year intervals.

Dr. Gary Ferland— University of Kentucky
Thursday - December 13, 2018 7:00 PM
Chemistry-Physics Building Room 155

The Star of Bethlehem

The Gospel of Matthew records a peculiar astronomical event that occurred at the birth of Christ. Could the "Christmas Star" have been a nova, a supernova, a comet, or some other spectacular sight? I will talk about what was visible around the time of the birth of Christ, and describe Kepler's idea that that the Star was a planet alignment that guided the "wise men from the East."

Tonight's *Kentucky SkyTalk* is part of an ongoing series. These are presented by the UK Department of Physics and Astronomy, and the MacAdam Student Observatory. Held every 2nd Thursday of the month, they are always free and open to the public.