

## The November Sky

November is a great month to see both near and far. We live in a galaxy that is shaped like a disk, 100,000 [light-years](#) in diameter. Most of the stars you see at night are relatively nearby and part of that disk. The stellar population of the disk includes clusters of stars. Stellar clusters form from the same gas and dust at the same time, making the cluster members all the same age with similar chemical compositions.

In an example of serendipity, there are two clusters, NGC 869 and NGC 884 easily spotted in the November sky. They are about the same age, appear in nearly the same direction in the sky, and are at essentially the same distance from Earth (~7,000 light-years). The brightest members of the [Double Cluster](#) can be best seen in a small telescope or binoculars. As always, darker skies make for more impressive views. The bright stars of Cassiopeia [serve as a marker](#) to help find both the Double Cluster, (near), and the Andromeda Galaxy (far).

The three westernmost stars in the “W” can serve as an arrow pointing to the Andromeda Galaxy or Messier-31 ([M31](#)). From a reasonably dark site, M31 is seen as a soft glow, even to the naked eye. What you are seeing is the combined light of billions of stars from that galaxy’s core. The true extent of M31 can only be appreciated from [photographs](#). A supernova appeared in M31 in 1885. The true brightness of the star was not appreciated until the distance to M31 became known. M31 is at the distance limit for a supernova to be detected with the naked eye. Modern equipment has identified the [remnant](#). No supernova has been observed in M31 since.

Nearby in the sky is another galaxy, [M33](#). M33 though is a more difficult object to detect. Complete night adaptation, dark, and transparent skies are essential for success.

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You will find an [all-sky finder chart](#) and the PDF of this flyer at [our web site](#).

## Kentucky SkyTalk

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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.

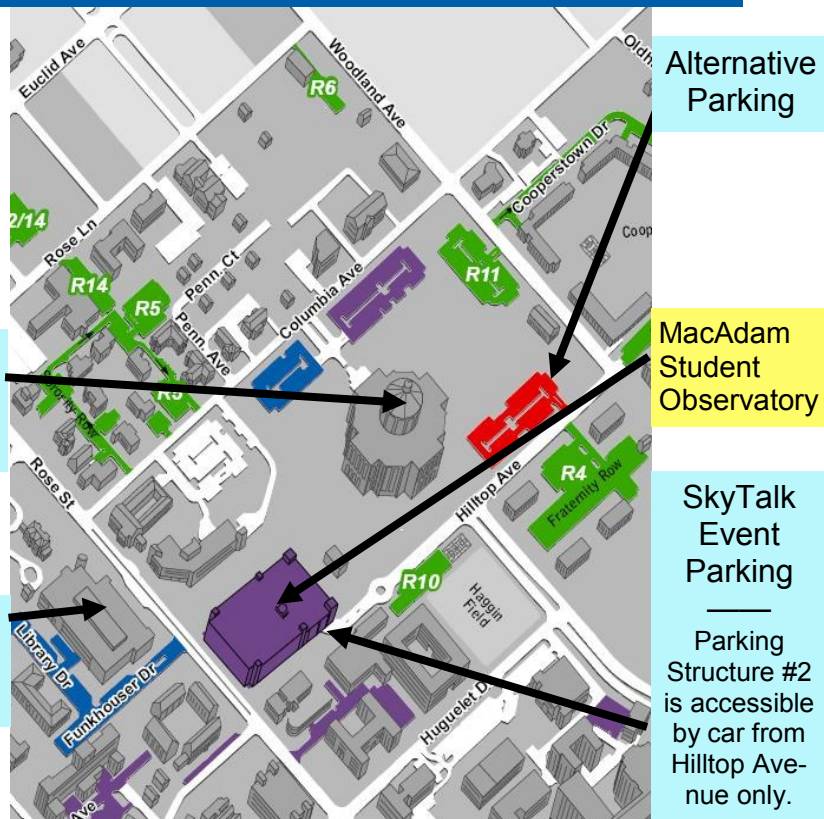
Are you interested in informal talks on astronomy and astrophysics? Are you curious about telescope design and operation? Would you care to take a look through the eyepiece?

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



### 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:

Dr. Gary Ferland - University of Kentucky

December 13, 2018 - **7:00 PM** - Chem-Phys Room 155

### *The Star of Bethlehem*

## Kentucky SkyTalk



Hubble Space Telescope-Image of Supernova 1994D ([SN1994D](#)) in galaxy [NGC 4526](#). The supernova is the bright spot at the lower left.

**Amber Moore** — [University of Kentucky](#)

Thursday - November 8, 2018 **7:00 PM**

Chemistry-Physics Building Room 155

### ***Supernovae:***

### ***Discovery, Death, and Explosions***

All living things have a life cycle, including stars. When a star reaches the end of its life it can sometimes go out with a bang. As we understand it, this “bang” is called a supernova—a titanic explosion that can last a matter of months and leave behind a supernova remnant. These explosions are incredibly powerful and give off tremendous amounts of energy, but that’s not all! Since their discovery, which dates back as far as 185 AD, observations of supernovae have shaped our understanding of distant galaxies and the star formation process. In this talk we will focus primarily on core collapse supernovae explosions, possible resulting remnants, and their observation history.

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 2<sup>nd</sup> Thursday of the month, they are always free and open to the public.