

SANDRA F. PRITCHARD MATHER PLANETARIUM NEWS

2019-2020 Season

The Mather Planetarium at West Chester University



Greetings! With the winter solstice behind us, we have more daylight to look forward to as we head on into spring. At the Mather Planetarium, we're looking forward to adding several new movies to our public show series. First up is "Phantom of the Universe", showcasing the hunt for dark matter. This movie will debut on January 31. After that it will be in our regular line-up so don't worry if you can't make it this month. Look on our website or Facebook page for additional show dates. We look forward to seeing you under the dome!

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<http://www.wcupa.edu/planetarium>

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"Somewhere, something incredible is waiting to be known."

- Carl Sagan

Remaining Live Shows for the 2019-2020 Season

January 24, 2020 - Venus: The Evening Star

February 21, 2020 - A Star is Born

March 20, 2020 - Our Amazing Sun

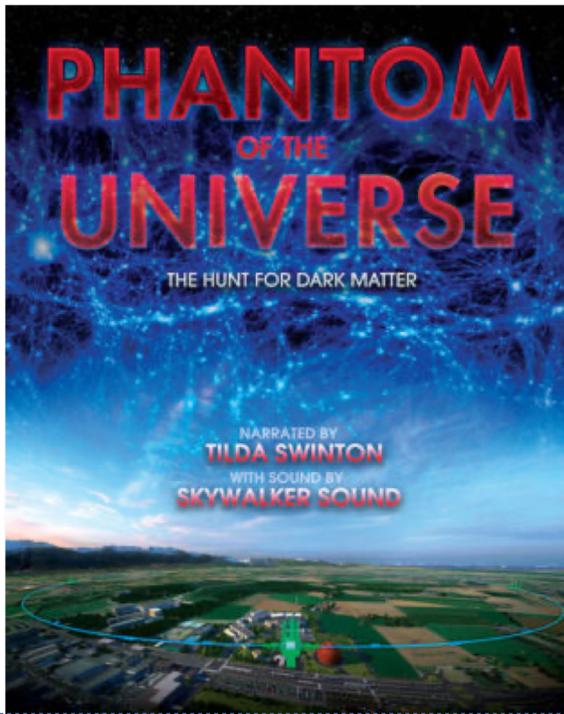
April 17, 2020 - Exploring Asteroids

Movie shows are scheduled for most Fridays when a live show isn't scheduled. Check our website for the full schedule and descriptions of the different movies.

New Movies!

Many of you are already quite familiar with our live presentations in the Mather Planetarium that are done one Friday a month. On the other Fridays, we offer movie shows featuring short sky tours led by WCU undergraduates followed by fulldome movies. These movies are both educational and entertaining, and cover a wide variety of astronomical topics. Using funds from tickets sales and private donations, we are occasionally able to add to our library of films. I'm very happy to announce that we'll be introducing several new movies this spring!

Our first movie show of the semester is scheduled for January 31 and will feature "Phantom of the Universe".



Phantom of the Universe showcases the exciting exploration of dark matter, from the Big Bang to its anticipated discovery at the Large Hadron Collider.

The show reveals the first hints of its existence through the eyes of Fritz Zwicky, the scientist who first coined the term "dark matter." It describes the astral choreography witnessed by Vera Rubin in the Andromeda galaxy and then plunges deep underground to inspect the most sensitive dark matter detector on Earth, housed in a former gold mine.

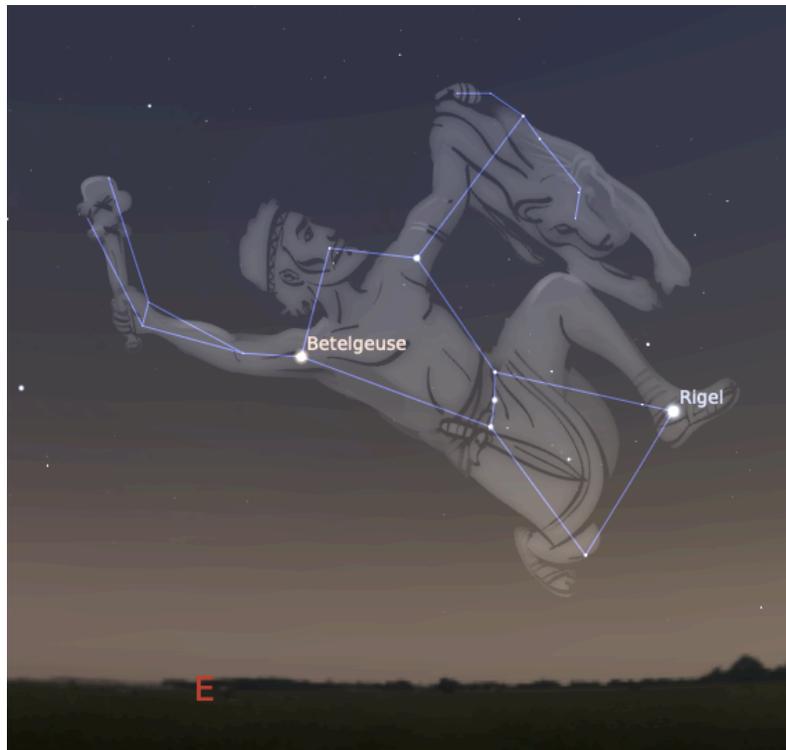
From there, it journeys across space and time to the Large Hadron Collider at CERN, speeding alongside particles before they collide in visually stunning explosions of light and sound. We learn how scientists around the world are collaborating to track down the constituents of dark matter.

While presentations at the Mather Planetarium are open to everyone, the complex subject matter of this new film is best suited for high school ages and up. We will be introducing two additional movies in the coming months that will be more accessible for families with younger children.

We will continue to show our other movies so if you haven't seen them don't worry... they'll still be in the line-up. Check our website and Facebook page for the most up-to-date schedule of all of our shows.



The programs in the Mather Planetarium are made possible by generous donations from the community. To learn more about how you can support our educational and public activities please contact Dr. Karen Schwarz at (610) 436-2788, kschwarz@wcupa.edu.



Looking Up: Betelgeuse

Orion is one of the most easily recognized constellations in the winter sky. His three so-well-aligned belt stars really catch the eye and the two brightest stars – Rigel at his foot and Betelgeuse at his shoulder – help outline the basic shape of the mighty hunter. However, Betelgeuse isn't as bright as it used to be and that's been the source of a lot of discussion in the news lately.

Betelgeuse is a red supergiant. Stars come in different types, depending on their mass. Supergiants are a stage of stellar evolution for massive stars – anywhere from 10-150 times the mass of our Sun. As these stars approach the ends of their lives they swell up to enormous sizes, hence the name supergiant. Betelgeuse is 12 times more massive than the Sun and has an impressive size of 900 times that of the Sun.

Since October of last year, Betelgeuse has been noticeably dimming. It used to hold the #9 spot among the 25 brightest stars in the night sky. It's now tied for #22. The star has gotten 2.5 times fainter in just the past 3 months! So, what's going on here? Astronomers aren't sure but they have some ideas.

All supergiants eventually end their lives in supernova explosions. Some folks have suggested that this recent dimming could be a signal that Betelgeuse is getting ready to pop. That would be pretty exciting but there are other, less cataclysmic explanations for the fading. Betelgeuse is a variable star, meaning that its light output changes regularly and has been doing so for decades. However, the dimming we see now is much larger than what's been seen in the past. It's possible that material was ejected from the surface of the star, and that is now absorbing some of the starlight. Or Betelgeuse's magnetic field might be playing some role.

Whether Betelgeuse's recent behavior is a signal or not, the star will eventually explode as a supernova. When that happens, the outburst will shine as bright, or brighter, than the full moon in our sky for several weeks. What a spectacular sight that would be! Even in its fainter state, Betelgeuse is an easy star to find. It might just be worth keeping an eye on for awhile. Who knows what it will do next?