# SEMINAR IN PHYSICS

Friday, March 29, 2019
3:30-4:25 – Ross 0220

~ Refreshments ~

## James Webb Space Telescope

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The James Webb Space Telescope (JWST) is a new telescope, set to be launched in 2021, that will address questions left unanswered after the Hubble and Spitzer Space Telescopes. On board the JWST is the NIRCam (Near Infrared Camera) that was designed and built by the University of Arizona.

The NIRCam will image in the 0.6-6 μm wavelength region, which supports the investigation of the four main areas that James Webb is designed to probe. These include finding the light from the first objects that coalesced after the Big Bang and studying what causes galaxies to form the structures they do. The NIRCam also plays a huge role in the success of the JWST because it is used to align the telescope's mirrors after launch.

## Gravitational Lensing

***Tyler Settle***
***UNC Physics Major***

People have been working with the idea of light bending since early Newtonian days, but thinking of light bending due to the effect of gravity only came about in the early 1900's. Using this phenomenon, we can view distant objects in the universe that otherwise would have gone undiscovered. We call this phenomenon gravitational lensing.

There are three main types of gravitational lensing – strong, weak, and microlensing. While similar, they are used to look for completely different objects in the night sky. These phenomena can help us with hunting everything from dark matter to exoplanets of distant stars. This ever-expanding field of physics is at the forefront of the modern understanding of dark matter.