

Assignment #5 Black Holes -Debunking the Myths

This assignment can be used as **summative** coursework.

Associated with Lecture 8 – the Death of Stars

Background: In class we learned that black holes are a type of stellar remnant. They form when the mass of a collapsing stellar core is so great that nothing can support it against gravity. A stellar black hole will compact its mass into a very small radius increasing its density and gravitational strength until nothing, not even light, can escape once its boundary (event horizon) has been crossed. The complex properties of these very strange regions of space have led to some common misconceptions.

Instructions: Listed below are three common black hole myths. Using any type of source material (lecture notes, web resources, text books, periodicals, videos, etc.), choose **one** myth to debunk in 350 - 500 words. Describe why the information given in the myth is scientifically inaccurate and what the physics of black holes predicts for the given situation. Please return your answers to me on a separate sheet of paper with this sheet as a cover sheet.

Black Hole Myths:

1. Our Sun will eventually become a black hole.
2. Black holes are cosmic vacuum cleaners, sucking everything in.
3. Astronomers can directly observe black holes.