

WHAT'S A...

BLACK HOLE

A **BLACK HOLE** is a region of space nothing can escape from.

DENSEST OBJECTS IN THE UNIVERSE

If the Earth turned into a black hole, it could fit **inside a marble!**



1 cm

Their mass can range from:

> 2 solar masses

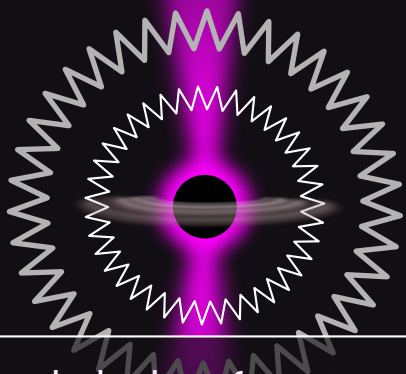
to

Millions of solar masses



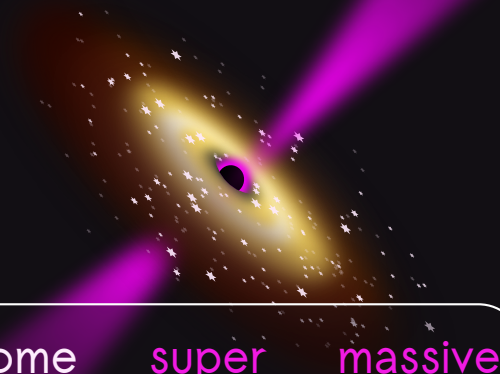
Black holes distort space-time so strongly they can **capture light!**

Collapsar



Black holes forming at the **center of dying, fast rotating, massive stars** drive powerful jets, causing extreme **supernovae and long gamma-ray bursts**.

Active Galactic Nuclei



Some **super massive** black holes at the **center of galaxies** feed on nearby gas. They create powerful jets and **bright emissions visible from the furthest reaches of space**.

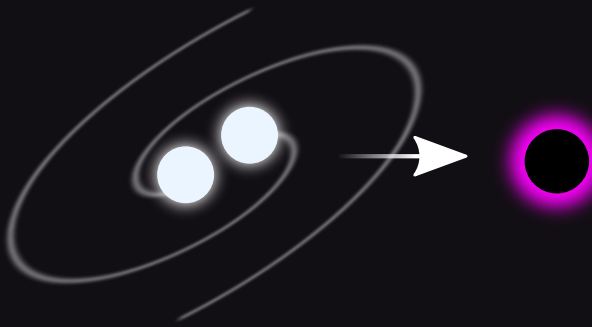
Gravitational Waves



Two black holes in a **binary system** radiate **gravitational waves**. This drives them together until they **merge**, which releases a **gravitational signal we can measure!**

TWO EASY RECIPES FOR A BLACK HOLE

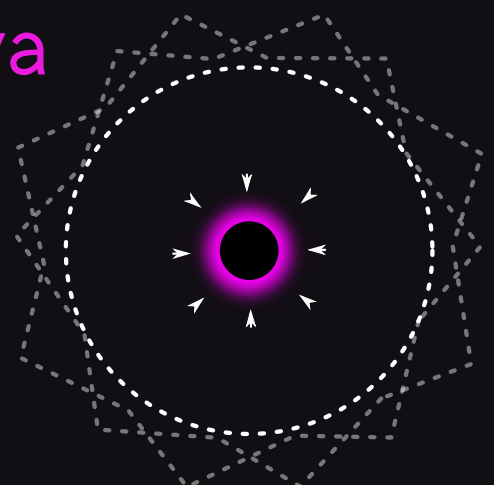
Kilonova



Neutron star merger.

Failed Supernova

Wait for a very (very) massive star to age and collapse under its own weight!



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