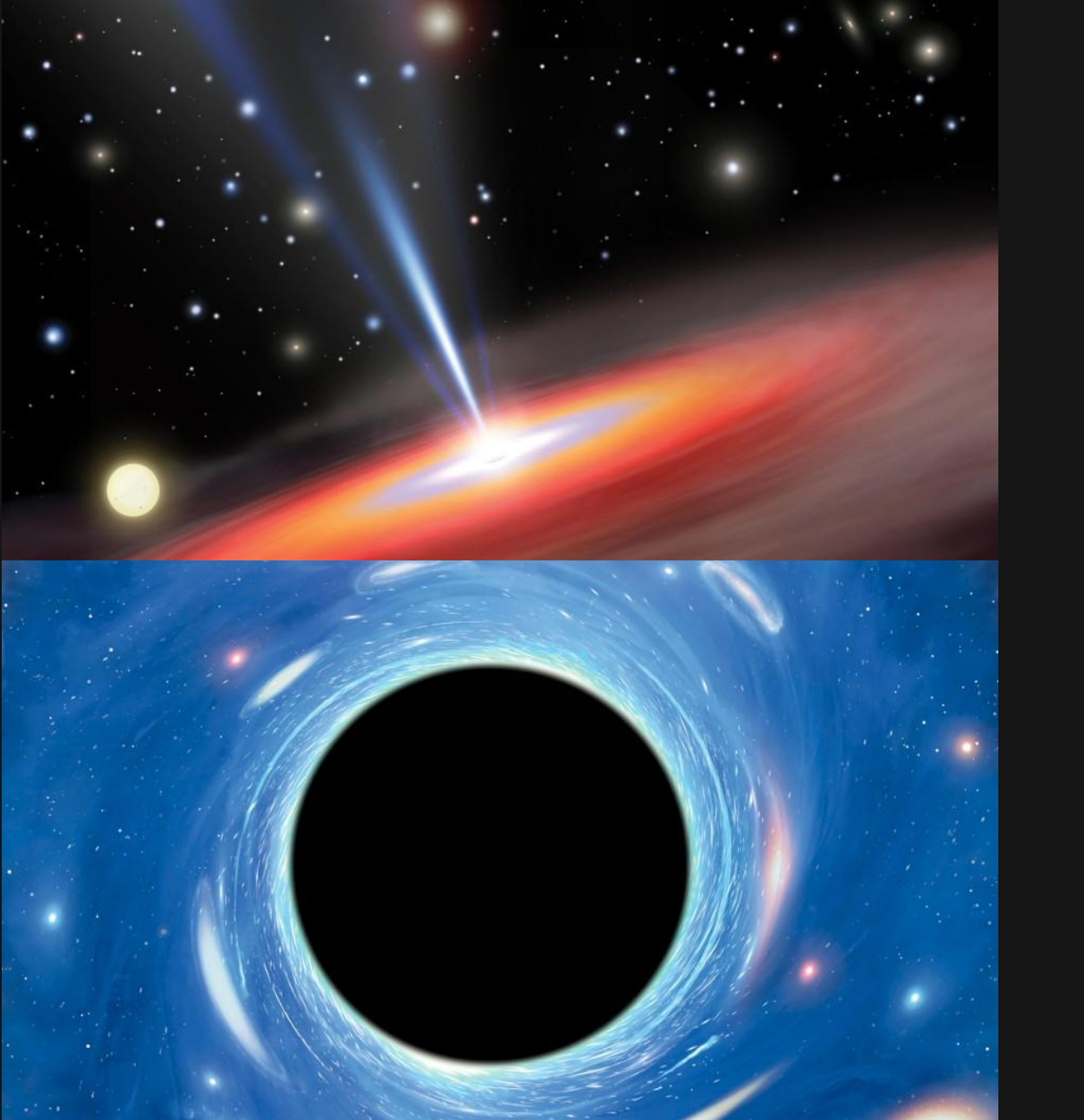


BLACK HOLES





At the center of most [galaxies](#) is one of the strangest and deadliest things in the universe: a black hole.

Most black holes, regardless of their size, are born when a giant [star](#) runs out of energy. The star implodes, and its center collapses under its own weight. This causes an explosion called a supernova. The giant star is eventually squashed into a supersmall dot you can't see.

A black hole's gravity, or attractive force, is so strong that it pulls in anything that gets too close. It can even swallow entire stars. Nothing can move fast enough to escape a black hole's gravity. This includes light, the fastest thing in the universe. That's why we can't see black holes in space—they've gobbled up all the light. Though astronomers can't see black holes, they know they're there by the effect they have on objects that get too close.

Two types of black holes exist. Supermassive black holes are the largest type of black hole. They're up to one *million* times more massive than our sun. This is the kind of black hole that's at the center of our galaxy, the [Milky Way](#); it's called Sagittarius A*. (A* is scientist-code for "A-star.") The most common type of black holes, stellar black holes, are only up to 20 times more massive than our [sun](#).

The intense gravity near a black hole makes time behave in strange ways. If an [astronaut](#) left his spacecraft to explore a black hole up close, he'd see the hands on his watch ticking at normal speed. But if anyone back on the spacecraft could observe the astronaut's watch from far away, they'd see its hands slow down as the spacewalker got closer to the black hole. When the spacewalker returned to the spaceship after an hour-long spacewalk, years would have passed for those aboard the spacecraft.

Someday humans might be able to use black holes to time travel forward. An astronaut could take a short trip near a black hole and return to [Earth](#) after years, decades, or even centuries had passed there. A black hole time machine could allow an astronaut to find out what the world will be like in the future. But going back in time? That's a different challenge altogether!

MORE FACTS:

- Thousands of potential black holes have been discovered, but [NASA](#) thinks there could be more than a billion of them in space.
- Black holes don't live forever. They slowly evaporate over time, returning their energy to the [universe](#).
- In 2015 two black holes crashed into each other more than a billion light-years from [Earth](#). (A light-year is the distance light travels in one year.) They weren't destroyed though—they just merged to create a bigger black hole.

Taken from:

<http://kids.nationalgeographic.com/explore/space/black-holes/>