

LIGO Science with Ogil!



What is gravity?

Gravity has played a big part in making the universe the way it is. Gravity is what makes pieces of matter clump together into planets, moons, and stars. Gravity is what makes the planets orbit the stars--like Earth orbits our star, the Sun. Gravity is what makes the stars clump together in huge, swirling galaxies.



Is a black hole really black?

A black hole is an object with such immense gravity that nothing—not even light—can escape from it, so they appear dark. Black holes form at the end of some stars' lives. The energy that held the star together disappears and it collapses in on itself producing a magnificent explosion.

What happens to a black hole when it is swallowed by another black hole?

It makes a bigger black hole.



What are gravitational waves?

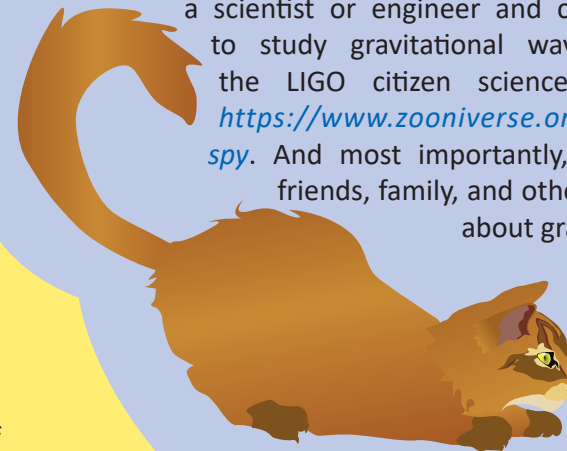
When a big boat moves through water, the water has to get out of the way to make space for the boat. The water has to curve around the boat!

When the water moves out of the way, it makes ripples or waves on the surface. Like a boat moving through water, massive objects moving through space make ripples or waves in space. A massive star or black hole moving through space causes waves in space. We call these waves gravitational waves. A passing gravitational wave squishes and stretches, squishes and stretches space itself and anything in it.



How can you help LIGO?

You can help LIGO by studying science and math so you can become a scientist or engineer and can work on LIGO or use LIGO to study gravitational waves. You can also help with the LIGO citizen science project called Gravity Spy: <https://www.zooniverse.org/projects/zooniverse/gravity-spy>. And most importantly, you can help by telling your friends, family, and others about what you have learned about gravitational waves.



What is LIGO? LIGO stands for Laser Interferometer Gravitational-wave Observatory. LIGO has recently detected gravitational waves from merging black holes. For more information, see <http://www.ligo.org>

Introducing Ogil!

Ogil (LIGO spelled backwards) is a friendly guide that will help you learn about LIGO.