

BLACK HOLES: WHAT WE KNOW ABOUT THEM

Relevant for: Geography | Topic: The Earth and the Solar System

Researchers have, for the first time, detected the gravitational waves from a newly born black hole and found that the ringing pattern of the waves predicts the cosmic body's mass and spin.

This provides more evidence for Albert Einstein's General Theory of Relativity. Einstein theorized that a black hole, born from the collisions of two massive black holes should itself "ring" in the aftermath, producing gravitational waves much like a struck bell reverberates sound waves.

The latest study showed that when a black hole is birthed, it emits gravitational waves at characteristic tones just like a struck bell, it fades away as the hole settles.

According to Einstein's theory, a black hole should exhibit just three observable properties: mass, spin, and electric charge. All other characteristics would be swallowed up by the black hole itself. The black hole acts as a one-way trapdoor.

Podcast| [Black Holes: what are we seeing when we see one?](#)

Despite the name, is actually a great amount of matter packed into a very small area making its gravitational field so strong that nothing, not even light, can escape. And because no light can get out of black holes, people can't see them.

They are effectively invisible and scientists use special tools to infer their presence and observe them by the effects of their enormous gravitational fields on nearby matter.

Most black holes are remnants of large stars that die in supernova explosions. There are four types of black holes: stellar, intermediate, supermassive, and miniature.

Astronomers believe that supermassive black holes lie at the center of almost all large galaxies. The Milky Way hosts Sagittarius A*, which is more than four million times as massive as our sun, at its center.

Also watch: [Why is the discovery of the Black Hole important? | The Hindu Explains](#)

Support quality journalism - [Subscribe to The Hindu Digital](#)

Please enter a valid email address.

Assam is the most species-rich State in India in terms of turtle diversity.

Support Quality Journalism

Prices to increase soon! Subscribe now for the best prices today!

Support The Hindu's new online experience with zero ads.

Already a user? [Sign In](#)

END

Downloaded from crackIAS.com

© **Zuccess App** by crackIAS.com

CrackIAS.com