

What we know about the black holes

[Science](#), [Astronomy](#)



The approximate measurement of the universe since the big bang is 13.8 billion years. Throughout this whole period of time, we have come across great mysteries and have been able to solve many mysteries, but the one mystery which we are still unable to solve is black holes. Even after years of research, Scientists still have not fully discovered the black holes and have not been able to give a concluding statement about the blackholes.

Blackholes are the most Delphic and mysterious objects which occurs in the whole universe. So far, all the blackholes exists in space only and our present in the center of every galaxy. They are created when a massive star is dying and radiates large amount of energy and during its formation it spreads mass 10 times or 20 times equals to the mass of sun.

Currently the biggest known blackhole possesses” the mass 40 billion times the mass of our sun” and is named “ S5 0014+81” and is “ 236.7 billion kilometer in diameter”. They can also be created by merging and colliding with some other blackholes. A question which comes into mind is that can all the stars become blackholes considering the fact as their life comes to an end. Scientists explain this question that only those stars will convert into blackholes that possesses a sufficient large amount of mass which is equals to 20 times the mass of our Sun. The common type of blackholes are stellar, super massive and miniature blackholes. Stellar blackholes are formed when massive dying stars disintegrates. Scientists currently do not know a super massive blackhole is created but they have speculated that maybe they are formed by some sort of intergalactic reaction of stars in the galaxy. So far, miniature blackholes have not been witnessed by the scientists completely but they have theorized that they might have existed before the big bang or

they will be seen in the occurrence after some time. Many scientists refer blackholes as a region in space where the force of gravity is maximum that even light which is the fastest travelling entity in universe cannot escape the blackholes but a theory tells that blackholes are not attractive to anything else except the gravity. A blackhole pulls the matter inside its body so tightly and densely that it creates its own gravitational pole. All the matter which is allocated inside a blackhole is concentrated in its center. So far, scientists have not been able to understand how the whole mater inside a blackhole is present in a single singularity. A German scientist, Karl Schwarzschild gave a theory about blackholes that any type of matter can be converted into a blackhole if it is compressed extremely tight.

In the year 1974, Stephen Hawking proved that blackholes emits radiation using quantum mechanics and emits sub atomic particles as well, this radiation is known as Hawking's radiation. This radiation theoretically reduces the mass and energy of blackhole which is called blackhole evaporation which proves that if blackhole does not pull something inside it then the blackhole will eventually proves will eventually come to an end. Hawking also theorized that blackholes will be the cause for Earth's destruction. Blackholes remains static as they are the heaviest objects in the universe and it would take an imaginable time to lose its mass but Hawking said that blackholes will pull the Earth inside it that's why he said that humans have to find another planet for living. Einstein's theory of relativity also confirms the unusual characteristics of blackholes such as existence of bridges as we know that blackholes stores its matter in its center in a single singularity which might prove to be a gateway to another universe. All laws

of physics do not apply inside a blackhole, there is no way of getting in or out in a blackhole so far. Blackholes bring a lot of complexity and misconceptions in almost every aspect, even after years of researches and hard work, no physicist or scientist has been able to understand the math and physics involved in blackholes. Some scientists believe that inside a blackhole, no laws of space time and physics are valid, some believe the singularity connects to a different universe. Another misconception is that one day our Sun will become a blackhole and Earth will be swallowed by the blackhole, a reasonable answer for that is the size of Sun is much smaller than the existing blackholes so it will not convert into a blackhole. But some people also believe that blackholes are also created by colliding and merging with one another and blackhole also pulls the object which is nearby it so it will pull the sun inside itself.

However, there is no theoretical or experimental evidence supporting this idea. A big misconception about blackhole is that, they are cosmic vacuum cleaners, it would be a vacuum cleaner if it the gravity field around the blackhole was attractive so it would pull everything inside itself but the gravity field around the blackhole is not really attractive as they will pull the object which is reasonably close to it. We know that blackholes are present in the heart of every galaxy, but we also know that blackholes have been feeding themselves by pulling objects inside itself but the question is will they ever pull a whole galaxy inside itself. ? In order for a blackhole to consume a whole galaxy, is to directly hit or to move around the whole galaxy but we do know that blackholes spin. Another concept about blackholes is that we know that blackholes lose their mass at an

unbelievable slow pace and when the time comes where blackholes possess no mass so they will eventually evaporate billions time the energy of nuclear explosions.

The most common question about blackholes is that what would happen if someone falls inside a blackhole, so far no one knows exactly what will happen but there are few possible outcomes. The first is we will die a very quick death because of the strong gravitational field inside a blackhole and our body will not be able to handle that strong gravity. The other possible outcome is that maybe blackhole will serve as a medium through which people will be able to travel through other universes and dimensions or the person will fall in the “ event horizon” the point around the blackhole from where nothing comes back. Blackholes are also witnessed by NASA in 2015, when their computers detected a plasma jet which was 260 million light years away in space as it was travelling at almost the speed of light which was coming from an unknown source. Scientists were able to conclude that it was a plasma burst from a supermassive blackhole. So far humans have not been able to understand everything about the blackholes but in the future we hope that we will learn more about blackholes and use them for the betterment of mankind.