Black Holes Energy

The black holes fascinate to us because they have properties to the limit of the well-known physics. But that is really? In following posts it will try to explain some properties to them on these inhabitants of our universe, or rather, it would have to say of its universe. References: black hole, x-rays,

If a lost astronaut in the universe fell in the interior of a black hole, would continue falling and falling eternally. Anything that never falls in a black hole more will return to leave and when I say anything I refer the astronaut, to a spaceship to a star or the own light.

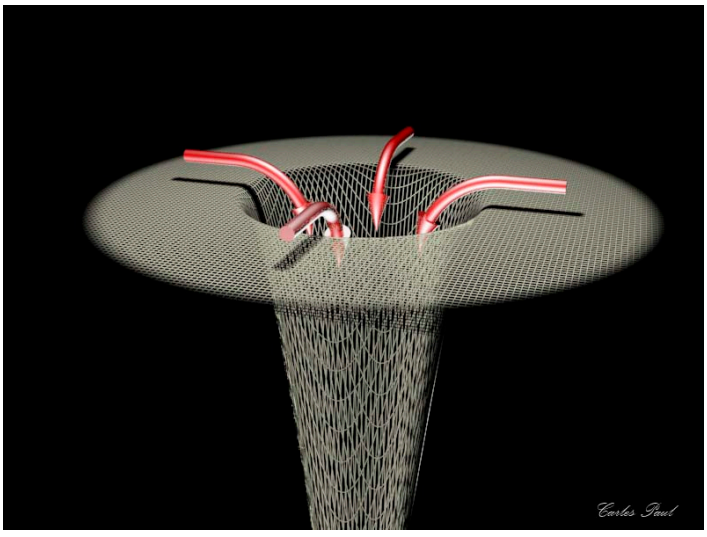
A careful observation, the previous thing is not absolutely certain if we consider the radiation of Hawking, but so far we forget put it that now treatment to explain it of qualitative form and with images.

Let us return to our black hole, only consider that it has the property to devour everything what approaches to him and never returns to leave. There is no mystery is it, the astronaut will fall and fall in the black hole because of the force of the gravity.

In a black hole the gravity is so great that the light that falls in him is even incapable to return to leave, since I have already said before.

As the astronaut approaches the black hole the force of the gravity is increasing, he arrived a moment in his travel that the intensity of the force is so enormous that in few centimeters its variation is tremendous. The force of the gravity in the feet of the astronaut will be million times superior that in the head, the astronaut has inevitably a tragic end. This is the tide effect, the acceleration in the feet is very many greater than in the head, remember that to a force an acceleration corresponds to it.

In order to become an idea, imagine that you are bottomless near a well, but this well has the particularity to attract you. The curiosity in this case is fatal, when approaching it attracts you and you falls and falls and falls….



What exists in center of the black hole? , there is no a satisfactory answer, in this zone the tide forces are infinite. All the mass of the black hole is in a point of null volume, therefore its density is infinite. Here it fails the theory and I leave to the subject for another one post. In all case of remembering that what it happens inside the black hole does not affect the outside, only the force of the gravity that depends on the mass of the black hole.

I go well to the title of post, if there is nothing can leave the black hole because we say that the energy of the black holes is enormous and can detect it with radio telescopes. The answer is simple, when it is spoken of the energy observed in the black holes is not energy of the own black hole but the energy of which it falls in his interior. But that can fall in a black hole to generate as much energy?,very simple, a star or a lot of them.

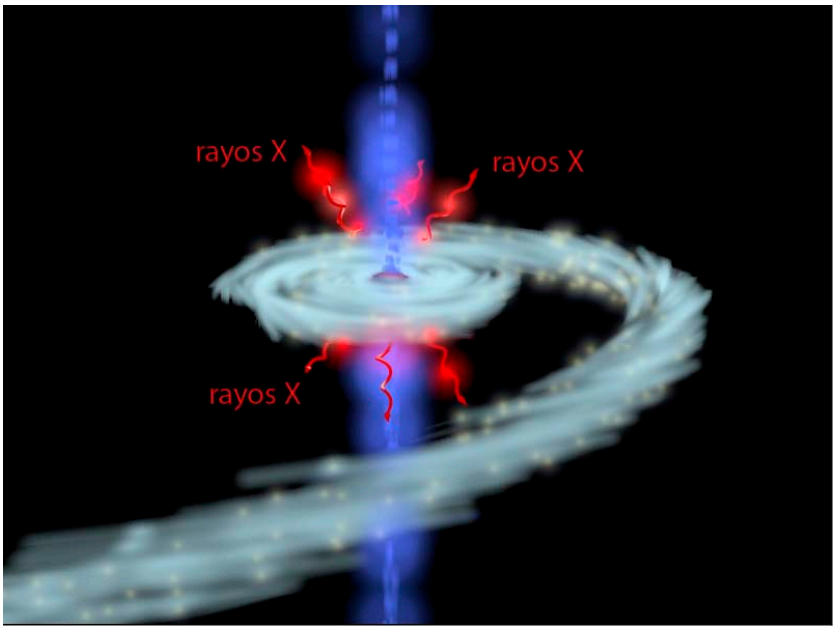
The force of gravity of the black hole is so intense that it is taking matter of near stars. The atoms are lost their electrons so that we can simplify saying that what falls in the black hole they are positive and negative electrical charges. The accelerated electrical charges emit electromagnetic radiation this electromagnetic energy in x-rays form is what the terrestrial radio telescopes detect.

The first candidate to black hole was Cygnus X-1 in 1965, when during the flight of a rocket it detects a powerful x-rays emission. In 1971 identify the x-rays source with a denominated star HDE 226868, is a supergiant star of blue color. New observations in 1972 detected that x-rays fluctuated very quickly in intensity and, could not be only the star. Later observations gave like result the explanation. The star was not single, was a binary system, attracted by the force of the gravity of its companion, a black hole with a mass 30 times the one of our Sun.

Of the supergiant star stellar matter flows towards the black hole, the enormous kinetic energy turns this matter gas that turns crowding around itself around the gravitational well of the black hole. It forms a disc species that turns like a carousel at enormous speed and submissive an enormous acceleration. The gas is falling to the black hole forming eddies and begins to emit electromagnetic energy in x-rays form before being swallowed.

Sometimes the kinetic energy is so great that some pieces of stellar matter can escape before falling in the black hole and form denominate jets. That they are expansions of matter at enormous speeds that leave in opposed directions of the plane of the gas disc.

I have put images to visualize the previous text, although an approach is single.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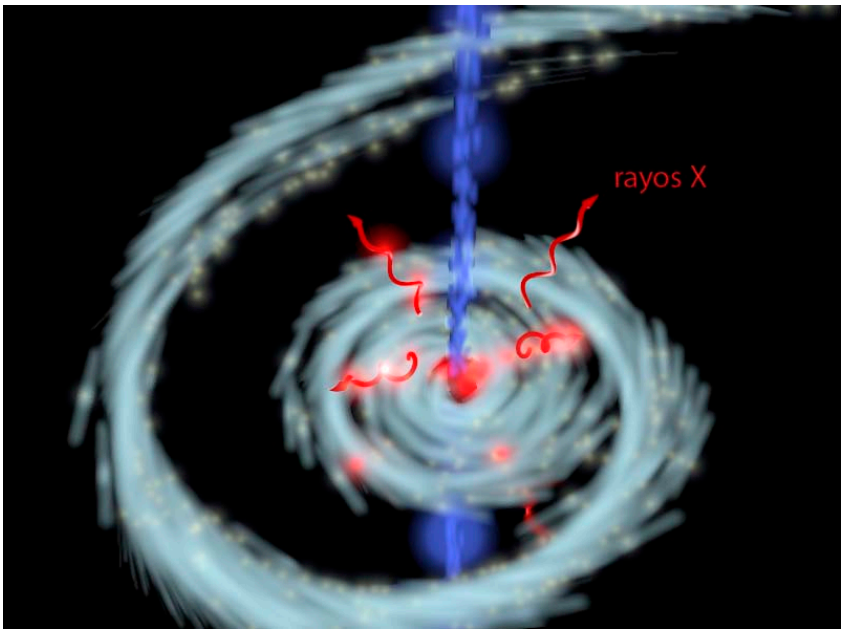
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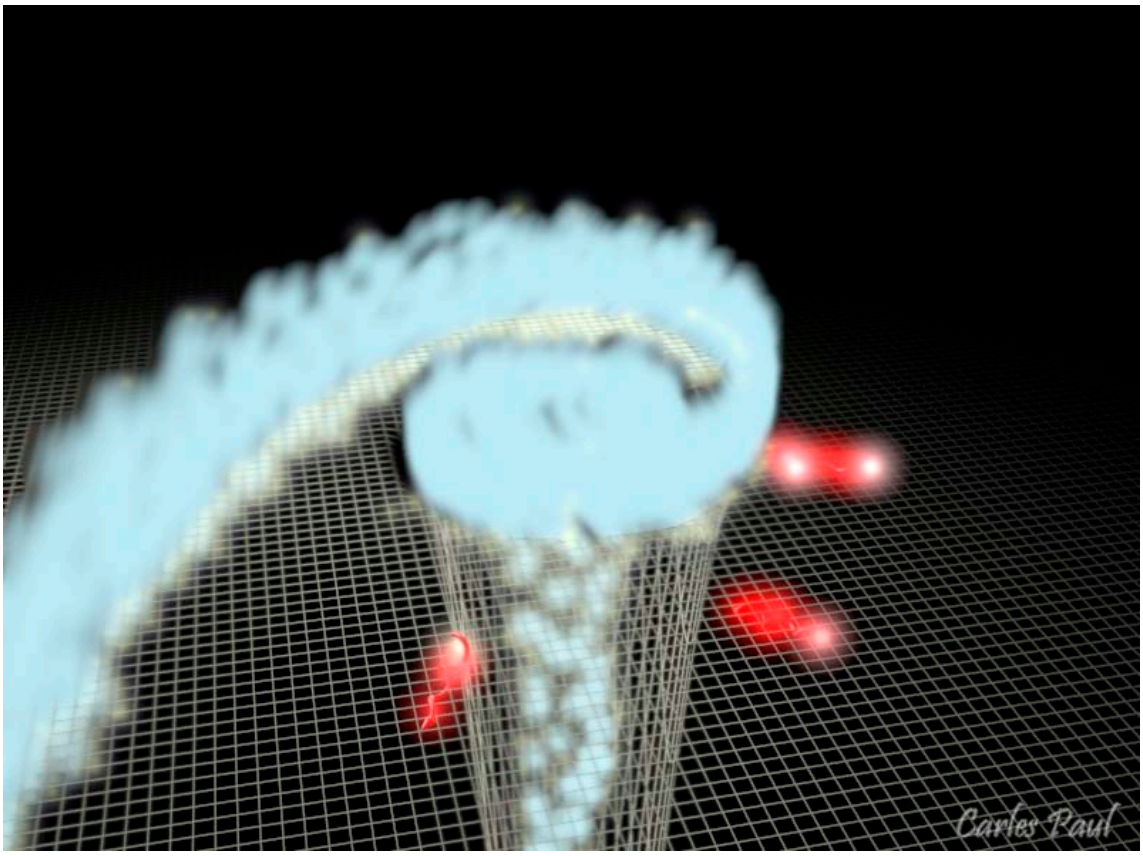
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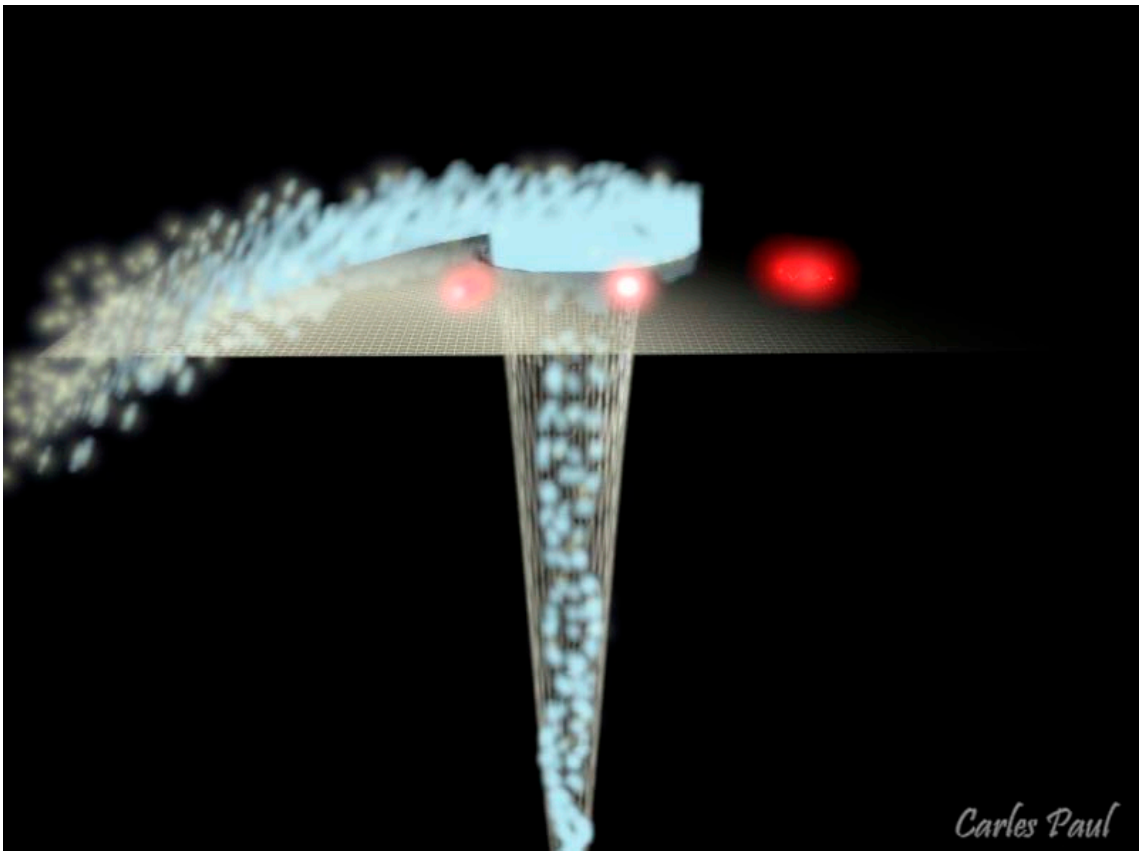
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