

Proof that the Black Hole is fallacious

(without mathematics)

by

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The proponents of the black hole make much fanfare of the quantity r that appears in the so-called “Schwarzschild solution”. They treat this issue with complicated mathematics and thereby confuse those not versed in the relevant mathematics. They routinely claim that this r is the radius, one way or another. However, this is false because it is not even a distance in “Schwarzschild” spacetime since it is easily proven that it strictly plays the role of the inverse square root of the Gaussian curvature of the spherically symmetric geodesic surface in the spatial section of “Schwarzschild” spacetime and so does not itself denote any distance whatsoever in “Schwarzschild” spacetime. Now one does not even need to understand the abstruse mathematics surrounding this issue to see that the black hole is invalid, making this complicated mathematical matter irrelevant, as I now show.

According to the proponents of the black hole it has an escape velocity of that of light in vacuum. This is easily verified by reference to the relevant literature. Now if that is so then light can escape since it travels at the escape velocity and so all observers can “see” the black hole. Not only that, ponderable bodies could leave the black hole but not escape since according to the Theory of Relativity no ponderable body can acquire the speed of light in vacuum. So there is always a class of observers that can see these ponderable bodies leave and fall back to the black hole. On the other hand, the very same astrophysical scientists claim that neither light nor ponderable bodies can even leave the event horizon of the black hole. Thus, the black hole has no escape velocity. They also claim that there is no class of observers that can see the black hole, no matter how close the observers are to the event horizon. But escape velocity does not mean that objects cannot leave, only that they cannot escape. Thus, the astrophysical scientists maintain two contradictory claims, and so their arguments are invalid.

Now all black hole “solutions”, be they for spinning or not, pertain to a universe that contains only one mass, the black hole itself. There are no known solutions to Einstein’s field equations for two or more masses and no existence theorem by which it can be even asserted that his field equations contain latent solutions for multiple masses. The Principle of Superposition does not apply in General Relativity and so one cannot assert that black holes can persist in multitudes. All talk of black holes existing in multitudes, interacting with one another and other matter is due to thoughtlessly applying the Principle of Superposition where it does not apply. In Newton’s theory the Principle of Superposition applies and so one can pile up as many masses as one pleases in a given space, because space and matter are not causally linked, although the equations describing their gravitational interaction quickly become intractable. In General Relativity this is not possible because matter and spacetime are causally linked and so act upon one another. This means that each and every different configuration of matter requires its own specific solution. Furthermore, escape velocity is an a priori two-body relation: one body escapes from another body. But the black hole has no other body that can escape from it since it is allegedly in a universe that contains no other masses. In addition, there can be no observers in the spacetime of the black hole because observers are material, yet

according to the proponents of the black hole observers and much other matter miraculously appear from nowhere. Upon what solution to the field equations do they rely for multiple masses? None!

The black hole was spawned from a solution for the “field equations” $Ric = 0$, which is a spacetime that by construction contains no matter. This black hole is called the “Schwarzschild” black hole, even though it is not even Schwarzschild’s solution and that Schwarzschild’s actual solution contains no black hole. Consider another “Schwarzschild” black hole. It comes from the very same solution for the first “Schwarzschild” black hole. Therefore each is located in a universe that contains no other masses, by construction. Proponents of the black hole claim that such black holes can exist in binary systems and are located at the centres of galaxies and interact with other matter in the galaxies. They also claim that these black holes can collide and merge. But this is impossible because it is already an application of the Principle of Superposition where the Principle of Superposition does not apply! Consider the notion of two “Schwarzschild” black holes interacting with one another, as one finds in the literature. Then the two black holes mutually persist in and mutually interact in a mutual spacetime that by construction contains no matter! This is impossible. Similarly, there can be no masses other than black holes in the spacetime of some given black hole and thus nothing for it to interact with.

According to black hole theory it takes an infinite amount of “outside” observer time for a body to reach the event horizon of a black hole. But nobody has been and nobody will be around for an infinite amount of time to make the observation. Thus the event horizon has no meaning in physics. Not only that, from where did the falling body and the observer miraculously appear, bearing in mind that there are no other masses in the spacetime of any given black hole? They come from again thoughtlessly applying the Principle of Superposition where the Principle of Superposition does not apply.

The proponents of the black hole make use of a test particle, but inadequately define what a test particle is. Let a test particle be a very small mass, as many proponents of the black hole claim. It is asserted that this can be done because the test mass is so small that it has no appreciable effect on the gravitational field involving the black hole. But if the test particle is massive, no matter how small initially, it can, by the laws of Special Relativity, become arbitrarily large, but finite, as it “falls” in the gravitational field of the black hole and hence results in a significant mass in the allegedly empty spacetime of the black hole. This is a two-body problem, but as we have seen there are no known solutions for two or more masses and no existence theorem by which the notion can be justified. If the test particle is not massive it is meaningless.

According to Einstein and his followers his Principle of Equivalence and his “laws” of Special Relativity must manifest in sufficiently small regions of his gravitational field and that these regions can be located anywhere in his gravitational field. Now both the Principle of Equivalence and the “laws” of Special Relativity are defined in terms of the a priori presence of multiple arbitrarily large finite masses and photons. Therefore it is impossible for the Principle of Equivalence and the “laws” of Special Relativity to manifest in a spacetime that by construction contains no matter. But $Ric = 0$, from which the “Schwarzschild” black hole is allegedly obtained, is a spacetime

that by construction contains no matter. That is why $\text{Ric} = 0$ is called the static vacuum (i.e. empty) field equations. Thus $\text{Ric} = 0$ violates the physical principles of General Relativity and so is inadmissible and so the “Schwarzschild” black hole is again invalid.

The proponents of the black hole remove all matter, including sources, by setting $\text{Ric} = 0$. They then prepare the ground for the presence of a source by next saying that $\text{Ric} = 0$ describes the gravitational field “outside a body”. They remove all matter at the outset by setting $\text{Ric} = 0$ and immediately put a mass back in with the words “outside a body”. This is a subtle but circular argument and is therefore invalid. Now, when they get their “Schwarzschild solution” there is no matter present in the solution. To satisfy their “outside a body” they have to put a massive body into the solution. They do this by a post hoc insertion of the square of Newton’s expression for escape velocity. But as we have seen Newton’s escape velocity is an a priori two-body relation (one body escapes from another body) and so it cannot rightly appear in what is alleged to be an expression for a universe that contains only one mass. Thus mass is inserted into the “Schwarzschild” solution by sleight of hand. Not only that, the denominator of Newton’s expression for escape velocity is a true radius but it is not even a distance in “Schwarzschild” spacetime, let alone the radius therein.

It is also claimed that the black hole contains an infinitely dense point-mass singularity. Now a simple calculation using Special Relativity shows that Special Relativity forbids infinite density. Recall that Special Relativity must hold in sufficiently small regions of Einstein’s gravitational field. Therefore, there can be no infinitely dense point-mass singularity in Einstein’s gravitational field. Furthermore, a point is a mathematical object, not a physical object. It therefore cannot be massive or infinitely dense. In Newton’s theory there are infinitely dense point-masses too. They are called centres of mass. A centre of mass is not a physical object, merely a mathematical artifice. One can go to the store and buy a bag full of marbles but one cannot go to the store and buy a bag full of centres of mass of the marbles. The proponents of the black hole claim that their infinitely dense point-mass singularities are physical objects. That is invalid too. The black hole is allegedly formed by irresistible gravitational collapse. Nobody has ever observed an astronomical body undergo gravitational collapse into zero volume and there is not one shred of laboratory evidence to suggest that masses can undergo such a process.

The signatures of a black hole are an event horizon and an infinitely dense point-mass singularity. Nobody has ever found an event horizon or an infinitely dense point-mass singularity and so nobody has ever found a black hole, despite the now almost daily claims for black holes being found in multitudes, all over the place. Note once again that the multitude involves an application of the Principle of Superposition where the Principle of Superposition does not apply. All claims for the discovery of black holes are wishful thinking, not science.

Black hole proponents often claim that the Michell-Laplace dark body from Newton’s theory is a kind of black hole. The Michell-Laplace dark body of Newton’s theory is theoretical. Nobody has ever found one of them either. Note however that the Michell-Laplace dark body is not a black hole: it has an escape velocity whereas the black hole does not have an escape velocity (see above); there is always a class of observers that can see the M-L dark body but according to the relativists there is no

class of observers that can see the black hole; the dark body exists in a universe full of matter whereas the black hole is alone in the universe; the black hole has an event horizon, but the M-L dark body has no event horizon; the black hole has an infinitely dense point-mass singularity, but the M-L dark body does not; the black hole is created by irresistible gravitational collapse but the M-L dark body is not so created. Thus, the M-L dark body does not possess the signatures of a black hole and so it is not a black hole.

The black hole is the figment of an unscientific imagination and must be relegated to its rightful place in the dustbin of scientific history, as an embarrassment to science for years to come, and a warning to young scientists that they should think carefully about what they are taught during their years in training. There is no substitute for independent and critical thinking when it comes to science. Blind acceptance of what one is taught is a sure recipe to mediocrity. The true scientist must always be willing to re-examine the foundations of accepted theory and the outcomes of experiments.

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