

Re: More on the controversy about the Schwarzschild radius and black

Source: <http://sci.tech--archive.net/Archive/sci.physics.relativity/2007-05/msg02706.html>

- *From:* stevendaryl3016@xxxxxxxxxx (Daryl McCullough)
 - *Date:* 17 May 2007 03:26:26 -0700
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Eric Gisse says...

stevendaryl3...@xxxxxxxxxx (Daryl McCullough) wrote:

In article <x6I2i.233\$4Y...@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>, Tom Roberts says...

Daryl McCullough wrote:

So the boundary between "too late to escape" and "not too late to escape" is a sphere that is expanding outward at the speed of light. Tom is calling that boundary the "event horizon".

This is not just me "calling it that" -- that's what the phrase "event horizon" _means_.

I didn't mean to suggest otherwise, but I think that LEJ Brouwer may be thinking of the "event horizon" and the "Schwarzschild radius" as synonymous.

Aren't they, in _this specific case_ ?

Definitely not. In the case we are talking about, we have a converging shell of matter. Inside the shell, there is no matter to speak of. So the total mass involved in the scenario is constant, M = the mass of the shell. The corresponding Schwarzschild radius is also constant,

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$R = 2GM/c^2$. But the event horizon is expanding outwards at speed c . So they're not the same thing. The event horizon is not expanding because the Schwarzschild radius is expanding. The relationship between them is just this: the radius of the event horizon approaches the Schwarzschild radius as $t \rightarrow \infty$.

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