

THE RISE AND FALL OF BLACK HOLES AND BIG BANGS

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ABSTRACT

The generic defining characteristics of all alleged black hole universes contradict the generic defining characteristics of big bang universes. Consequently black hole universes and big bang universes are mutually exclusive - they cannot co-exist. For instance, all alleged black hole universes are eternal whereas all alleged big bang universes are of finite age (~13 billion years); all alleged black hole universes are not expanding whereas all alleged big bang universes are expanding. All black hole universes are independent universes just as all alleged big bang universes are independent universes since each different type of black hole universe pertains to a completely different set of Einstein field equations. Despite their incompatibility cosmologists routinely blend these black hole and big bang universe to produce multiple black holes in some big bang universe, in violation of elementary logic, and augment the inadmissible hybrids with a Cosmic Microwave Background Radiation ad arbitrium.

Whenever¹ you hear cosmologists talk of a black hole they never tell you what type of black hole they allege in what type of big bang universe they allege. It is always reported something like this: there is a black hole here or there and the Universe is expanding. More often than not the black hole is mentioned without any reference to a big bang expanding universe, which is simply assumed as a canvas onto which their black holes are painted. The vagueness of all this is amplified when you learn that there are actually four alleged types of black hole universes and that there are three alleged types of big bang universes.

What are the alleged types of black hole universes you ask? Let's list them.

- (1) Non-rotating, charge neutral
- (2) Non-rotating and charged
- (3) Rotating, charge neutral
- (4) Rotating and charged.

What are the alleged types of big bang universes you ask? They depend on the type of constant spacetime curvature they have, usually denoted by the letter k ; the k -curvature. Let's list them too.

- (1) Spatially infinite ($k = -1$, negatively curved spacetime)
- (2) Spatially infinite ($k = 0$, flat spacetime)
- (3) Spatially finite ($k = 1$, positively curved spacetime).

Each type of black hole universe is no less a universe than each type of big bang universe because each and every black hole alleged is a solution to a completely different set of Einstein's gravitational field equations. As such black hole universes

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and big bang universes are all independent of one another. To see why this is so we need only examine the generic defining characteristics of black hole universes and big bang universes and then compare them to one another.

All alleged black hole universes:

- (1) Are spatially infinite
- (2) Are eternal
- (3) Contain only one mass
- (4) Are not expanding
- (5) And are either asymptotically flat or asymptotically curved.

All alleged big bang universes:

- (1) Are either spatially finite ($k = 1$) or spatially infinite ($k = 0$ and $k = -1$)
- (2) Are of finite age (~13.8 billion years)
- (3) Contain radiation and many masses
- (4) Are expanding
- (5) And are not asymptotically anything.

Note also that none of the alleged black hole universes possesses any big bang k -curvature.

It is immediately apparent that none of the foregoing defining characteristics of black hole universes are compatible with those of the big bang universes. Consequently black holes and big bangs are mutually exclusive. Nonetheless cosmologists thoughtlessly blend them to obtain billions upon billions of black holes in some unspecified big bang universe that is of finite age.

That a black hole universe is a universe is clear from the fact that it is either asymptotically flat or asymptotically curved. There is no bound on asymptotic, for otherwise it would not be asymptotic, and so there is no bound on the extent of the spacetime of any black hole. Thus the black hole universe is spatially infinite. Let's consider just two alleged black holes. Each black hole disturbs the asymptotic character of the spacetime of the other black hole by its presence, no matter how far away they might be supposed from one another, and thereby violates this defining feature of a black hole. Moreover, all alleged black holes are said to have an infinite spacetime curvature at their so-called 'singularity'. Consequently each of the two black holes under consideration encounters an infinite spacetime curvature at the singularity of the other, and that is a far cry from being asymptotically anything. It's clear that a black hole universe can't coexist with any other black hole universe or even with a duplicate of itself. Nor can it exist inside some big bang universe. Similarly no big bang universe can coexist with any black hole universe, with any other big bang universe, or with itself. Now consider the 2.5 million black holes that NASA scientists [1] have allegedly found with their WISE survey! Each of these alleged black holes encounters 2, 499, 999 'infinite' curvatures around it, and that's a long way from being asymptotically anything. What about the cosmologists' claim that 'almost' every galaxy harbours a supermassive black hole at its centre? How many galaxies are there?

Now try placing any of the black hole universes, which are all eternal, inside any of the big bang universes, all of which are allegedly ~13.8 billion years old. They don't fit! What about sticking in any of the black hole universes, all of which are spatially infinite, inside the spatially finite type of big bang universe? They don't fit either. You can try fitting any of the other defining properties of black hole universes with the defining properties of the big bang universes. You will find that none of them fit, as the comparative list above succinctly reveals.

Every black hole is, on the one hand, alleged to have an escape velocity and this escape velocity is greater than or equal to the speed of light in vacuum, usually denoted by the letter c . For instance,

“black hole A region of spacetime from which the escape velocity exceeds the velocity of light.” [2]

“According to the theory of relativity, nothing can travel faster than light. Thus, if light cannot escape, neither can anything else. Everything is dragged back by the gravitational field. So one has a set of events, a region of spacetime from which it is not possible to escape to reach a distant observer. Its boundary is called the event horizon. It coincides with the paths of the light rays that just fail to escape from the black hole.” [3]

The escape velocity of a body is the velocity that another body must initially have in order to escape from the gravitational interaction force produced by them upon one another. A rocket, for instance, must attain the escape velocity of Earth to escape from Earth. Note that escape velocity does not imply that things can't leave, only that things can't escape unless propelled at or greater than the escape velocity. If you throw a ball into the air, did it leave the surface of the Earth? Certainly! Did it escape from the Earth? No; it falls back to ground.

Now, on the other hand, it is also claimed that nothing can even leave the event horizon of a black hole, let alone escape. Things can only go into a black hole but nothing can even leave or emerge, not even light. This property is often referred to by cosmologists as a 'one-way membrane' at the event horizon.

“I had already discussed with Roger Penrose the idea of defining a black hole as a set of events from which it is not possible to escape to a large distance. It means that the boundary of the black hole, the event horizon, is formed by rays of light that just fail to get away from the black hole. Instead, they stay forever hovering on the edge of the black hole.” [4]

Thus, Hawking [4] tells us that nothing can even leave the event horizon, because even light hovers at the event horizon, “forever”.

Professor Bland-Hawthorn [5] of the University of Sydney alleges a particularly curious escape velocity.

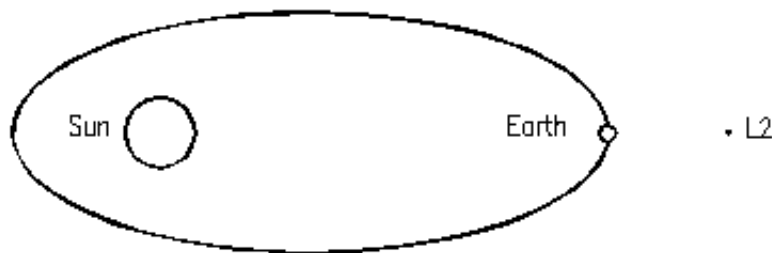
“A black hole is, ah, a massive object, and it's something which is so massive that light can't even escape. ... some objects are so massive that the escape speed is basically the speed of light and therefore not even light escapes. ...

so black holes themselves are, are basically inert, massive and nothing escapes.” [5]

Light travels at the speed of light, and according to Bland-Hawthorn the escape speed is the speed of light, from which he concludes that light can't escape. Well, if the escape speed is the speed of light and light travels at the speed of light, then light not only leaves, it also certainly escapes.

Since all black holes are alleged to have an escape velocity and since nothing can even leave black holes, the cosmologists thoughtlessly claim that their black holes have and do not have an escape velocity simultaneously; which is quite impossible.

The Cosmic Microwave Background (CMB) is claimed by cosmologists to be the afterglow of some big bang, the type of which they never say. Various atmospheric balloons and rockets, and several satellites, have allegedly measured the temperature of this afterglow, the so-called mean temperature of the Universe or the monopole signal, and tiny variations therein called anisotropies. Yet the monopole signal has never been detected outside the influence of Earth. The Cosmic Background Explorer (COBE) satellite was only orbiting Earth at an altitude of about 950 km. The Wilkinson Microwave Anisotropy Probe (WMAP) and the *Planck* spacecraft were located at the Second Lagrange point, L2, which is some 1.5 million km from Earth, on Earth's far side from the Sun.



COBE carried two instruments: (a) the Far Infrared Absolute Spectrophotometer (FIRAS), and (2) the Differential Microwave Radiometers (DMR). FIRAS allegedly measured the monopole signal of the CMB and DMR the so-called anisotropies in the CMB. WMAP was a differential instrument and so was incapable of detecting a monopole signal - it could only address anisotropies. The *Planck* spacecraft carried two instruments: (1) the Low Frequency Instrument (LFI), and (2) the High Frequency Instrument (HFI). Also aboard *Planck* were two 4 Kelvin blackbody loads for the LFI to compare to. Although the *Planck* LFI was able to make both absolute and differential measurements, the *Planck* team has never reported detection of a monopole signal at L2. Thus, no monopole signal has ever been found beyond the influence of Earth.

Did any of these instruments actually detect microwaves from the Cosmos? If you put a glass of water in a microwave oven and turn it on, does the water reflect or absorb the microwaves? A microwave oven emits microwaves – that's why it's called a microwave oven. The water placed inside it gets hot, and if left there long enough,

vaporises. The same happens to a block of ice. Submariners also know that water absorbs microwaves. Radio communications by microwaves can't be used for submarines when under water because the oceans and seas completely absorb them rapidly over a very short distance. Now it is well known from experiments that anything that absorbs also emits in the same frequencies, and so that which absorbs microwaves also emits microwaves. Thus water also emits microwaves in all its phases (solid, liquid, gas). About 70% of the surface of the Earth is covered by water, and there is water in the atmosphere. The atmosphere scatters radiation and microwaves are radiation. COBE-FIRAS carried a radiation shield, but this shield could not block microwaves from Earth because it was not designed for microwaves. All detections of the monopole signal have been from water on Earth, not from the Cosmos. All the alleged anisotropies are nothing but data-processing artefacts due to attempts to remove the microwave radiation from the foreground of the Milky Way, present in the microwave images. The alleged anisotropies are some 1 million times weaker than the monopole signal and some 1000 times weaker than the microwave noise due to the Milky Way. It is simply impossible for the spacecraft detectors to recover such a weak signal from such a strong enveloping noise level, even on the assumption that the anisotropies are present. However, they are not there, since there is no CMB. The so-called CMB does not come from the Cosmos [6, 7, 8].

There are a great many additional demonstrations that black holes, big bangs, and the Cosmic Microwave Background are figments of irrational imagination [9, 10, 11, 12, 13] but I will not detail them here. I was invited to present a talk about these and related matters at the Electric Universe conference held in Albuquerque, USA, in March 2014. My presentation, of which this article has been an overview, was recorded and is now freely accessible online:

Crothers, S. J., 'The Parallax Effect on Short Hair',
<https://www.youtube.com/watch?v=nXF098w48fo>

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