Primordial Black Holes

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Abstract

Astrophysicists often speak of three types of black holes: stellar, intermediate, and supermassive. There is a fourth category in one-universe theories, but has not yet been detected by our instruments. This essay will examine more possibilities for primordial black holes, within the actual four-dimensional multiverse.

The current view of primordial black holes is summarized by these NASA sentences:**[1]**

> "Astronomers generally divide black holes into three categories according to their mass: stellar-mass, supermassive, and intermediate-mass. The mass ranges that define each group are approximate, and scientists are always reassessing where the boundaries should be set. Cosmologists suspect a fourth type, primordial black holes formed during the birth of the universe, may also lurk undetected in the cosmos."

Among my nearly 190 original science essays I have discussed the first three types multiple times. For example, here is a recent essay on the most famous type, *supermassive* black holes, all the way down to their smallest spherical yin/yang EM components. Our Milky Way galaxy hosts one of the "lesser" supermassive objects, along with a number of much smaller black holes, and even potentially explosive black holes.**[2]**

I recently discussed *intermediate-mass* black holes, a category that is often minimized in popular theses. I have furthermore discussed *stellar-mass* black holes, a population that could be the most common within our current local universe.**[3]**

Another type of visual "hole" where matter appears to vanish is the *white* hole. White holes are said to be *hyperspace portals* paired with black holes. They are modeled within GR math, but do not fit into any 4D physics models. Such portals are common within hallucinogenic science fantasy. White holes are like a fifth kind of "black" hole, and they have been properly dismissed in an earlier essay.**[4]** Ironically, real black holes are also very bright, but in very high frequencies that our instruments don't measure.

Primordial Models

Astrophysicists and astronomers with increasingly awesome machines are seeking the first elements of our *local BB universe,* which they persist to model as THE universe. The associated puzzle of *primordial black holes* thereby grows in prominence.

When *primordial black holes (PBHs)* are modeled with early GR theory, our local universe only begins with THE Big Bang. Even though something like previous universe-creating big bangs are allowed (because something cannot emerge from nothing), most current metaphysical math models project the data we can gather as only being from our birth explosion. Circular-logic paradigms are very *weak theory* that foolishly self-limit real scientific inquiry itself. Ideally, physics and philosophy will again merge, as they once did in Ancient Greece.

I have discussed the differences between models with quaint 2D pure-math ideas of physics – versus much more robust ideas of 4D multiverses, which also include Einstein’s 4D GR model. Metaphysical M-Theory mathematics’ 10^500 possible hologram *flat universes* (which can only at that number satisfy their algebra equations) are not worth serious discussion within physics and astrophysical primordiality, despite the popularity of Hawking.**[5]**

If we allow that there may have been “something” before our own Big Bang 13.8 billion earth years ago, then we slip into *the infinite regression trap*. To say that “something” predates our own Big Bang, is to absolutely invite the question: *What has preceded that which preceded our own local big bang?* And so forth we go toward an infinite questioning of our full heritage. Only an intellectually honest model of the *self-maintaining, 4D multiverse composed of interpenetrating 4D local universes* can satisfy honest physics scrutiny within a Theory of Everything.**[6]**

Even the best paradigm encounters the question of what is at and beyond the apparent “edge” of any total 4D multiverse. There is no human-physics measurement tool that could describe what is “beyond everything,” except to include the beyond dimension into the definition itself — which at first seems absurd, but is elegant. Even the elusive idea of one omnipotent god above time and space does not escape questions of origins, forces, and dimensionality within eternal Totality.**[7]**

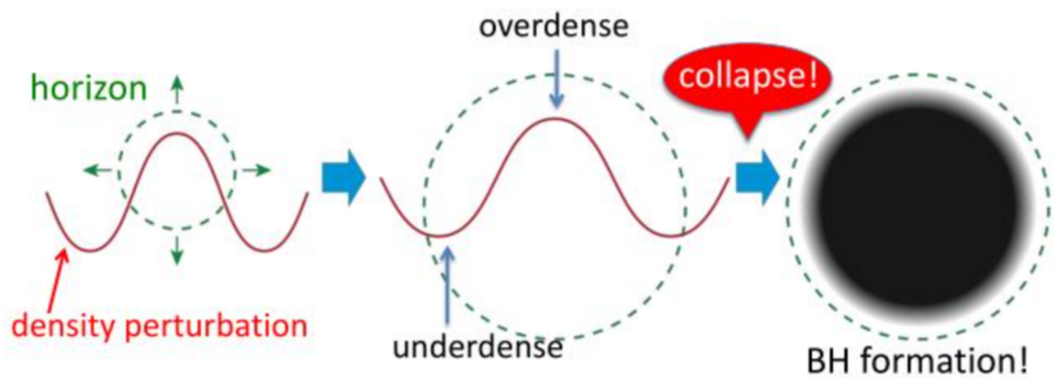
Primordial Black Holes

How do primordial black holes fit into the physics that emerged from our local big bang? Are PBHs foundational, or are they just another snipe hunt within the ever-changing cosmos?

Astrophysics does not like elusive dark secrets, such as dark matter and dark energy. Experimentalists have gone about their hunt for DM and DE based on deficient theories of foundational physics. I have previously explained several times exactly how both *dark matter* **[8]** and *dark energy* **[9]** work.

Primordial black holes are envisioned entities that seemingly could bridge the gravitational gap between single-universe, big-bang physics, and the puzzle of dark matter. Ideas range from PBHs being essentially all of dark matter gravity — to being a small part of DM, and even to being irrelevant for today's local universe — due to quantum evaporation (misnamed Hawking radiation) at their tiny event horizons.

Wikipedia has the best overview of PBH theories, including the popular quantum field theory (QFT) model of density collapse. **[10].** Here below is the Wikipedia illustration of how fuzzy QFT primordial black-hole formation is said to work:



The idea of persistent primordial black holes necessitates a huge number of very tiny, but relatively massive, PBHs. Some have hypothesized that these tiny black energy packets are enough to explain gravitational dark matter. These simplistic kinetic models are challenged in three ways:

<u>First</u>, such tiny black holes were never common enough to diffuse everywhere through space, and thereby to account for the massive apparent gravity effects as measured.**[11]**

<u>Second</u>, the coherent density perturbation theory behind creating early, post-BB black holes is weak and inconsistent from multiple directions. There are better semi-classical theories that could lead to an elegant TOE embracing dark matter.

Third, any tiny PBHs will have long since evaporated due to event-horizon quantum effects. Even if the PBHs started out very common in the earliest plasma universe — which had a very small volume itself compared to today's great volume — that does not prove they are still present and dominant 13.8 billion light years later in today's diffuse quantum soup/sea.

It is very important to remember that awesome instruments from today and the near future might tease out gravitational hints of early PBHs — but light-speed-limited delay proves nothing about today's dark matter surrounding our nearby viewpoint.

Quantum Field Theory was invented last century to supersede the earlier particle-centric, Quantum Mechanics Theory. Quantum field theory data tries to correlate with highly verifiable Standard Model of particle physics data — while staying true to some quantum scales aligned with Einstein-like spacetime.

Both QFT and GR idealistic maths are easily reverse engineered to appear to appear causal — when indeed they are correlative only with the ubiquitous yin/yang particle physics paradigm underlying all physics linear dimensions.

Fields and waves are combined in QFT, but what foundational items are these waves composed of? For example, oceans are composed of water molecules and their beaded components. Waves in the air are composed of beaded strings vibrating and rotating from energy inputs. Even electromagnetic waves in "empty" space need kinetic fluctuating links within the "quantum yin/yang sea" to propagate. Without the idea of sub-Planck, vectorized primary particles, QFT would promote the difficult idea of nothing yields something, which is hard to define or defend.

In sharp contrast, the fully developed correct physics paradigm of *foundational yin/yang, EM-Coulombic, 4D spherical particles, each at 10^-38 m, AND their longer waving beaded strings*, allows the real marriage of quantum and classical.

Essentially, there is a 4D quantum sea, and it is partially composed of individual yin/yang Coulombic spheres inside the Planck tiny dimensions. At the same time, yin/yang beaded strings and aggregates are common in the "sea." These various-length strings with different frequencies can extend into the classical dimensions, due to the great Coulombic forces between adhering juxtaposed yin/yang spheres. These larger entities both constitute waves, and transfer yin/yang particle energy from one beaded string to another.

Myriads of randomly moving foundational particles from all directions (yin/yang particles and beaded strings), with equal multiversal push forces, constitute part of the so-called quantum sea. The rest of the sea is another vast population of low or no acceleration yin/yang EM spheres. Both high and low vector constituents interpenetrate, thanks to primary EM expressing neutrally. Note that these vast massive flows, combined with shadow effects from concentrated masses, constitute the push/shadow force we call *universal gravity*.

In short, here we have the best of quantum theory and classical theory harmonizing. This emerging unified theory expands electromagnetic waves beyond dipole plus and minus, to include *primary EM* — and allows a path for certain types of superpositioning without the voodoo.**[11]**

Note that primary EM can express as dipolar or monopolar, or even as neutral — displaying the unity of cause and effect, also known in Buddhism as *renge* (pronounced: ren'-gay).

References

[1] https://science.nasa.gov/universe/black-holes/types/

[2] https://astronomy-links.net/BB.BHs.pdf

[3] https://astronomy-links.net/intermediate.BHs.pdf

[4] https://astronomy-links.net/white.holes.pdf

[5] https://astronomy-links.net/Hawking.legacy.pdf

[6] https://astronomy-links.net/size.of.universe.pdf

[7] https://astronomy-links.net/beyond.the.multiverse.pdf

[8] https://astronomy-links.net/bright.black.holes.pdf

[9] https://astronomy-links.net/Faster.Dark.Energy.pdf

[10] https://en.wikipedia.org/wiki/Primordial_black_hole

[11] https://astronomy-links.net/intermediate.BHs.pdf