Big-Bang Black Holes

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Abstract

Black-hole mass cores are often considered to be candidates for new big bangs. Core locations alone do not explain why so few black holes of any size ever burst into new local universes of any size within the overall 4D multiverse. This distinction is outside 20th-century physics models, but still inside our mental ability to well envision all linear physical dimensions from the proper 21st-century perspective.

Before the early 20th century the very idea of a physical "black hole" would be fantastic outside of pure math. Mathematics has a history of big contributions in the realm of physical black holes. Karl Schwarzschild published a math solution in 1916 to Einstein's general relativity near a non-rotating, spherical mass. His model showed a limit to how small a physical mass could be squeezed, which is not math zero. Recently we have achieved more than one awesome image of real supermassive black-hole regions outside event horizons, including our own galaxy's, called *Sgr A**.

What about "images" of our local universe's historical big-bang event, which envelops billions of galaxies? Although we will never have an image of the very first moments of our own local visual universe, we can piece together a strong narrative from multiple perspectives of a phase "soon" thereafter, primarily through the cosmic microwave background (CMB).

Some of this physics magic is partially thanks to the relatively "slow" speed of visible photonic light, which defines our limited concept of physical time. There were even hyperluminal speeds at the very first. Nevertheless, no 20th-century perspectives include the key elements for explaining how our big bang itself began apart from all the other BHs, as well as other similar local events within our proximal multiverse.

Above all else, what do we really know about ordinary black holes anywhere that will never explode to create a new local universe? How can we distinguish the key forces that could turn an ordinary black hole into a big-bang monster? Hereinafter is a potential elegant model for both:

Our truly causal perspective needs to have more focus on the smallest fundamental matter/energy units, none of which have zero physical space. Quantum theories model these individual and short-beaded units as random quanta, but that's only part of what fundamentally is.

We need to keep in focus both our local 4D universe, and the much older 4D multiverse surrounding and interfacing with our local visible universe. All large physical things are composed of dialectical small things, and we must reflect equally on the real dialectical energy/matter foundation. A brick house is composed in part of bricks, but its occupants hardly reflect on individual bricks, nor on the subatomic "bricks within each brick." A brick wall is likewise ultimately not composed of individual giant bricks, but "bricks" in electromagnetic symphony.

Organic and inorganic entities we recognize are all composed of untold trillions of fundamental matter/energy dialectical units far beyond everyday and experimental consciousness. Everyday consciousness and stale physics models cannot measure and embrace how each human dialectically emerges from these fundamental components. That's where properly envisioning electromagnetic (EM) physics and astrophysics comes into focus.

Primal units individually and in short beads compose what is insufficiently known as the sub-Plank quantum realm,**[1]** and they may appear to be just random from our perspective. From *their* perspective, their quasi-Brownian motions are not random. Each fundamental yin/yang unit exists independent of observers. Just because we cannot directly see something, or even embrace it with old theory and blunt instruments, does not by itself indicate that an "unseen something" does not in reality exist.

What we have here is a version of *the "god between the gaps" problem*: We humans like to insert anthropocentric gods, or just anthropophilic ideas we can easily embrace, into some areas we can never fully embrace. Fundamental EM units have little to do with human societies, and everything to do with our dimension of human perception. If universal anthropomorphic gods could care about us, they likely would not care. Why should they? We trust "gap gods" to care for us anyway, with little evidence.

To err on the small dimensional side, or the large side, is the same. Perceptual weakness is not by itself a bad thing, just an expression of the vast complexity of Reality, and our experimental inability to quantitatively comprehend it all.

Emerging 21st-century physics is now challenged to put better perspectives around comfortable classical theories. The best new science "instrument" is a synergistic combination of proper new theory, with proper deduction and induction needed to envision the best we can of the forever unseen.

The Foundation of Physics and Astrophysics

Classical Greeks wrestled with the idea of fundamental physical units. Their concept of an atom was something so small as to be indivisible. Zeno of Elea's paradoxes considered infinitesimals toward math points. Later, Newton's laws of physics had points at intersections between lines. None of these excellent ideas for their time got close to the foundation of physics and astrophysics.

In the 20th century there was, and still is, a particle-physics competition between classical near-point objects, and quantum sub-Planck "quanta" that observers can locate by position or motion, but not both at the same time. The 21st century has transcended all of these near misses with the 4D model of yin/yang electromagnetic spheres and Coulombic cohesion, near the smallest physical linear dimension of 10^-38 meters.**[2]**

All pure-math 2D "physics" models are absurd and essentially self-destructive, however clever their ideal maths may seem to be. The most popular idea of string theory requires 2D-math with 10^500 string *universes*. Considering that there are between 10^70 and 10^80 hydrogen *atoms* in our one visible universe – and that each increment of one power magnifies the previous total by 10 – then all such multidimensional, multiversal math "physics" solutions are quaint at best.

21st-century physics is both particulate and dialectical. What may have first been called quanta are close to the real yin/yang spheres. The idea of randomness is associated with beaded measuring limitations, not with voodoo. All of the forces of nature can be best described within the realm of yin/yang physics. Models such as General Relativity spacetime branes seemingly describe unified space and time. These models are only the triumph of reverse engineered correlation, not causation.

Critical to understanding all linear dimensions is comparing Newton's idea of the *inverse* power of gravity with Coulomb's idea of the *inverse power of electromagnetism*. Also, we need to appreciate the magnetic component of EM, not just its dipolar electrical aspect. M*agnetism has, with push/shadow gravity, great extension, whereas dipolar electricity is most useful within short distances.*

Most important for this big-bangs essay is noting that yin/yang *primary EM* can express as non-polar, not just dipolar. Non-polar unity of time and space can also express as dipolar, even while most yin/yang particles are at primary net neutral.

Both Newton's force gravity, and upgraded push/shadow gravity involve *neutral collisions* mostly. Here we appreciate the *gravitational unity of Newton and his younger, 17th-century contemporary, Nicholas Fatio* – who got the idea, but not the particle details, correct with push/shadow gravity. *Newton's forces resolve into myriad primary EM particle vectors for each 4D object, not just linear vectors described by his brilliant math.*

We need to appreciate both the qualitative and quantitative linear differences between *our human dimension, wherein we arbitrarily set the zero point at ourselves*, and project dimensional realms toward the maximal and minimal:

Individual y/y Coulombic spheres exist at about the *negative* 38th logarithmic metric dimension. This could be *the smallest physics dimension with a coherent population* – even while *pure math dimensions* can go down an "infinite ladder toward zero," or a math point. For practical purposes we can envision y/y spheres both as "near-points" AND as the collective dynamic foundation for everything larger, including beaded strings that spin and *seem* to behave like classical quanta, which they are not.

The dimensional difference between our "human zone" at between 10^0 meters and 10^-1 m is that between ten meters (about 33 feet), and one meter, (about 39 inches). This range defines the arbitrary anthropocentric point of scientific reference.

As for *larger scales*, it "only" takes about *27 larger dimensions* to reach the juxtaposed multiverse. As for *smaller scales*, we are looking at about *38 smaller dimensions below our own*. In other words, our small world is numerically much more complex than our residence within the largest structures. Looking deep within ourselves, the dimensional "trip" inward is greater than toward the multiverse beyond our visible universe. We have scientific tools that can instrumentally record from 10^-18 m, up to about 10^26 m. Good, but that's hardly enough to use this data range of experimental science for establishing so-called universal laws.

Enter our brains, each with about 100 billion neurons, and with each average neuron having about 1000+ synaptic connections. That's about *100 TRILLION synaptic connections just sitting atop our shoulders*, ready to envision the gestalt beyond what our data science gives us. Real total physics in the real world is far more amazing than antique algebra says it is.

Which Black Holes Could Become Big Bangs?

Among the billions of black-hole core masses in our local universe nearly all will never become replacement local big bangs creating entirely new local universes within the same local space. That rarity is a good thing for *advanced* life to develop. There are also a few *"mini big bangs" (MBB)* within our own local universe; and these less powerful "creative explosions" will be described in a future essay.

Gravity theory that relies on GR spacetime slopes that don't work among sub-Plank BH "quanta" can never specifically explain what happens inside critical-mass cores. A true theory of gravity should work in *all* physical linear dimensions, not just some. That includes inside and outside BH event horizons The fundamental actors, when known, must also be described in ways that do not violate what we experimentally have learned of basic forces. Therefore, any new BB must also deal with so-called quanta in more nearly classical ways.

Among the early fears associated with particle colliders are the ideas of accidentally creating a new micro BH, or even a runaway explosive cascade. None of this has ever happened, even within the Large Hadron Collider. Nor will such ever happen within any more powerful future particle collider. Reason? Not enough kinetic power is generated, and *protons or neutrons* are not the same as a BH core mass composed of compacted yin/yang spheres that are not yet atomic. Physicists sometimes think of them as like complex tiny planets.**[3]**

There is Feynman's concept of the vast energy contained within *"vacuum energy."* His theory is both quantum and GR derived, which is quaint from a 21st-century perspective. He and John Wheeler calculated that the energy contained within so-called vacuums is vast:

> "Two well-known physicists, John Wheeler and Richard Feynman, famously predicted the value of the energy density of vacuum energy to be an astronomically huge number, 10^112 ergs/cm^3. This value is so massive that Feynman and Wheeler said it would take only a teacup of this type of energy to boil the Earth's oceans." **[4]**

We can debate how to elevate Feynman's quantum field theory conception of GR into 21st-century physics. It makes more sense to estimate the number of "quantum sea" individual y/y spheres per unit volume in the so-called vacuum of space.

The real point here is that there is a mind bending amount of tightly trapped "vacuum" energy in what seems like a small quantity of matter. Only something like a full BB could unleash that level of energy, as explained below. Our visual universe is a testament to that fact. Vastly more energy has been released elsewhere in other local universes from seed BHs, and thereafter transformed back into yin/yang components, following the law of conservation of energy and matter. Locally emergent yin/yang structures, along with the *multiversal quantum sea*, constitute collectively the much more vast 4D multiverse.

Consider the great potential energy within the core of a dense black hole, where quantum fluctuation can be somewhat quelled by push/shadow net gravity and spherical Coulombic forces. By comparison, the environment around individual photons in a particle collider is not at all the environment of individual y/y spheres deep inside the BH mass. Interestingly, even in the much more extreme environment nearly all BHs do not qualify as BB candidates.

Releasing Vast Energy Inside the "Right" BH Cores

All BH cores are spherical, or nearly so, as spheres are the most efficient 3D shape. This shaping works both on the smallest scales inside any event horizon, and on celestial bodies. At the larger scales, as with solar system planets and planetoids, those few larger than 400 miles in diameter assume spherical shapes. All rocky planets are thus mostly spherical.

Only the gas giants, such as Jupiter and Saturn, rotationally "flatten out" toward their fluffy poles. "Objects" such as galaxies are not singular objects as such. Galaxies include collections of elongated net spheres and other gravitationally affected entities such as molecular clouds. *Pseudo-voids* of crowded gravitational spaces are all populated by so-called random quanta, which are mostly individual y/y spheres and short (dark) strings of them. We can assume that the composite 4D multiverse itself is more or less spherical on the aggregate, due to its lack of fast centrifugal rotation relative to its vast diameter.

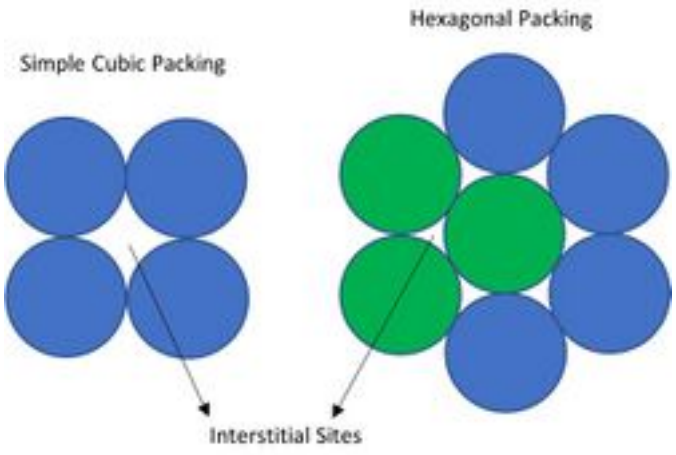
The diameter of black hole central masses is critical for BB ultimate explosions. Unlike the first math ideas of black holes, real space does not compress toward a point singularity. All black hole cores go through a compression phase as energy pours in. The core of these cores partially compresses first, and the outer core continues to resist additional incoming mass particles, all due to what is apparent *quantum pushback*. {For an interesting alternate view of collapsing quantum waves, see **[5]**.}

Quantum pushback allows for moving primary Coulombic units to keep moving in apparently random ways independent of still weaker net gravity. This randomness is only from an "observer," not from within the momentary logic of each y/y sphere. There comes a time when the growing net input of vast kinetic energy is such that even rotating, or random, central units are squeezed to where they cannot further compress. At this moment all y/y EM spheres are *still intact;* and there is not yet a resultant BB.

Another similar process involves the creation of *neutron stars*, a fate of less massive supernovas that can't quite make event horizons that trap normal photons. Neutrons are much larger than y/y spheres, similar to giant protons, and contain huge numbers of quanta-like y/y short strings. Given enough time and incoming kinetic energy/mass, neutrons could further collapse into classical black hole environments, but rarely. However, neutron stars have enough outside curved surface area, and pushback, to deflect future incoming energy from turning them into new BHs with event horizons.

Sphere Packing

Here below is a geometric way to show how spherical structures composed of smaller spherical units give incoming kinetic energy, or sub-Planck push gravity, the maximum geometric opportunity for maximum compression:



The practical science of sphere packing was developed for optimal stacking of cannon balls. Modern versions of sphere packing are concerned with all sorts of ways to "pack" atoms and sub-atomic units. The math applies within all linear dimensions, including the smallest dimensions well below typical sub-atomic.

The illustration here represents two-dimensional cross sections of three dimensional collections. In three dimensional spheres there can be twelve equal-sized spheres touching a central one.

When dealing with Earth's net gravity, the smallest dimensions are essentially unconcerned with GR or any other type of gravity slopes. Newton's gravity is like Coulomb's electromagnetism. Both are *inverse square equations* where the more proximal two mass centers are, the greater is their mutual attraction.

In the illustration above the *interstitial gaps* are smallest for spheres of the same size within a greater sphere. Other shapes, such as the boxy one on the left have larger gaps. Therefore, EM cohesion among juxtaposed spheres *inside* their collective sphere can be much greater. Within the smallest dimensions Coulombic forces are primary – and within large nearly spherical structures such as planets net push/shadow gravity is primary.

Net push/shadow gravity is also associated with the smallest matter/energy units, the yin/yang spheres. Universal gravity considers sub-Planck gravity-slope dimensions to be almost irrelevant. That is not true when multiple pushes from spheres outside each of the twelve adjacent spheres are added up.

Y/Y Spheres Can Elongate Into Ovoid Shapes

Unlike rigid cannon balls, or billiard balls, y/y spheres can adjust their shapes to some degree from different external forces. Think of this as being roughly similar to how balloons can be reshaped into balloon animals. When left alone from massive vector forces, these spheres which are strongly held together by Coulombic *virtual exteriors* want to snap back to their optimal spherical shape.

There is one key difference: Balloons change shape, but not total volume, as they are not being compressed from all sides. Y/y spheres can distort, and they can also shrink from external forces. Also, at different points on the surfaces their Coulombic shield will experience different challenges. Eventually there could be a rupture at one point on at least one spherical shield. That's when things get extremely interesting.

The very word, electromagnetism (EM), implies that dipolar electricity and magnetism are intimate. Indeed, within the incredibly small volume of any one identical y/y sphere are all versions of primary forces, including primary EM, which can co-exist or separate as needed.

There is a beautiful physics concept in Japanese Buddhism called *rengé.* It is properly pronounced *ren-gay.* The elegant concept of rengé is the *simultaneity of cause and effect*. Because there is hyperluminal (i.e., faster than "c") shifting of components within spheres, things move much faster than relatively slow light speed in vacuums – and thus faster than ordinary ideas of time – yielding the apparent simultaneity of cause and effect.

I have for decades thought it was weird to be able to describe the vacuum speed of light very precisely – and still not know how all visible light frequencies get to that same speed in the first place. It is amazing how many scientists are happy to work with such a critical vector without a clue as to what's behind the math. **[6]**

My theory of primary EM spheres clearly explains stretching and snapping back of strands of 4D y/y beaded strings. For the release of new photonic beaded strings, the centrifugal force of spinning "graviton" bases (typically much larger solar neutrinos) yields from detachment spinning y/y strands that centrifugally detach after stretching.**[7]**

As the new beaded strings accelerate, the earlier "ovoid spheres" snap back, yielding "c" vacuum light speed. In other words, we start with round individual spheres; then stretching ovoid beaded spheres; then return to round beaded spheres. Visible photonic frequencies are a simple function of string length determining spin and energy.

Strings that are too short and energetic to be measured are very bright photons, though we call them dark. This means that *much so-called dark matter is very bright*, except that we cannot

measure such frequencies. Literally, we are experimentally "in the dark" on such a critical matter. Seen properly, generating different photonic strings is the logical start to understanding how illogical double-slit magic works.

Spheres Can Squeeze Into Interstitial Space

Cubic packing, as with box-shaped composite structures does not offer as many opportunities for spheres touching each other. *Hexagonal sphere packing* offers the best opportunity, a full *twelve possible contacts for each internal sphere*.

It is just as important, if not more so, to note that each of the twelve juxtaposed spheres of equal size *stack up gravitationally* on the central inner spheres. *In the case of y/y spheres extreme pressure from a large number of directly pressing outer spheres magnifies the push/shadow effect.* This process is "assisted" by the fact of individual y/y spheres changing shape enough to fill in the interstitial spaces, while still maintaining the virtual shell.

It is only when the collection of spheres is discrete, not in the form of beaded strings, that the maximum disrupted pressure effect is achieved. This may be the key to understanding the difference between ordinary black holes and BB black holes.

As long as quasi-random motion is allowed inside the BH central mass, it will be impossible for that mass to minimize its size, and maximize its internal pressures. Since so extremely few BHs ever explode, it is logical to hypothesize that nearly all candidate BHs still possess so-called random motion spheres and their short strings.

This also means that *the majority of spherically shaped central black holes are much larger than they could be, and that results in much weaker push/shadow gravitational pressures on any or all naked core y/y spheres.* We envision these differences at the smallest physical dimensions, within proper 21st-century models.

Because the primary sphere-to-sphere EM cohesive attractions between and among all beaded links are much weaker than the virtual boundary for each sphere, there is opportunity for ultimate naked-sphere cores to grow somewhat after all beaded strings are broken along with their short-length push-backs.

We can model regular BB core masses as mostly involving dark matter motions, which disrupt the otherwise continuous inflow of multiversal naked y/y particles. This filtering in the predominant outer layers protects central naked y/y spheres from excessive compression; and so their Coulombic virtual spheres hold.

The exact moment when a sphere's boundary is broken is the absolute start of another big bang. This is when and how the rengé core contents burst apart and fly apart. Because liberated energy and liberated mass are in some ways separate, they do not soon return to reformed Coulombic y/y spheres.

The original yin and yang elements of discrete spheres fly away in different directions. These original elements, however, are identical essentially with others of their kind. Even though the newly penetrated space is vast, the original pairs never need to reunite. There will be plenty of opportunities to "meet" new partners among the dipolar fragments within the quantum sea. In this way the old first becomes fragmented and new in each new BB – and all becomes "old again" many billions of years later in new BHs and refreshed quantum seas.

Thus begins the process of a new local universe simultaneously expanding and looking for new order. The hyerluminal expansion itself weakens proximal Coulombic forces, so it takes hundreds of millions of Earth years for enough spheres to re-form and evolve to where new photonic strings are long enough, and frequencies low enough, to be detected from a proximal local universe such as ours as another cosmic microwave background. This means that some of what we identify within "our" CMB could be residual energy from juxtaposed local universes.

It is important to note that any big bang of any intensity will not neutralize most regional and multiversal "quantum sea" y/y spheres, and their "dark" short-beaded strings. Nor will most or all other local black holes nearby vanish. Supermassive black holes with slow rotation can last for many billions of years. Therefore, a good number of black holes in our local universe likely have "witnessed" and survived multiple big-bang events.

References

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