

Quantum Time

by Matt Coughlan

v.1.2

Introduction: Skeptical? You and Me Both

Time is a Function, Not an Axis.

There. I spoiled the plot of the whole book in the first sentence. You were thinking you were going to pick up this book and get another pseudoscience bargain bin dumpster fire, and instead, I gave you everything all at once.

That's because the idea is more important to me than the book. My goal here is to question with you that fundamental pillar of the scientific map, combine where everyone has been right, and perhaps we might find that tweaking that one part could make everything fall into place.

If you are a scientist, a mathematician, a physicist, then I respect your rigorous scientific professionalism. If anything I say in this book is reaching too far too fast, I get it. I'm just one guy. What the heck do I know? It's definitely not exactly right. That's the scientific method.

I love science and I love scientists and anyone who teaches knowledge. If I sound like I'm diminishing anyone's accomplishments, rest assured that I am playing around. It takes a certain tightrope walker to balance how things work with how things could be, skepticism and a firm grasp of what works and what doesn't. Every discovery I talk about and every person who discovered them I hold in the highest regards.

I've been thinking about this, perseverating, for forty years, holding the greatest scientific discoveries in my head, and that's why I'm not trying to convince science of anything, because you were right all along. If anything I'm entreating you to take this and run with it and see where it leads you. All I'm asking for now is for you to follow along with me on the thought experiment that was already paved by you.

If you are a layman, then my job is to take you on this rollercoaster, make this book worth your while, and all the while we never leave the station.

Also, if the premise of this book is correct, nothing much will change. Some physics books will have to be rewritten, and the three people working at CERN will be scratching their heads going, so that's why we got electrons and muons! Also if you have had to learn the field equations, I'm sorry: it's going to get a whole lot easier.

For 99.9% of humanity, the regular version of how we do things won't change:

Time is objectively subjective, but people are subjectively objective.

Yes, you will still need to go to work on Monday (or school or whatever). Reading this book won't change that. What could change with a greater understanding of the fourth dimension is not how the math works (mostly), but mechanically why it works the way it does. In this book we think about:

Why everything is a wave
Why pi and e matter everywhere
Why the periodic table of elements works that way
Why we are matter, and where all the antimatter went
And much more...

I need you to know that I know naming a book Quantum Time will flip some tables. Literally all of common sense wants to rally against the concepts within this book. It sure rallies against mine. I'm as surprised as you are that these things work. You may have noticed that I don't write like a scientist, at least not in the way that you think scientists look. I don't own a labcoat, and more importantly, I don't have a PhD. If you think those are the only people who can piece together a puzzle, then I urge you to reread human history. (Or watch the first Iron Man. "Tony Stark built this in a cave, with some scraps!")

Also, I'm not that guy you meet at a party that's like, "it's all frequencies man, they've got a bunker but I found it with my third eye." I guarantee that I am not about to go off the deep end. There are no pyramids or flying saucers in this book. I will attempt to entertain you and describe phenomena with commonplace analogies however, because what I do have is a boundless

sense of creativity and obsessiveness. Everything I say I will back up with either logic or proof or data—or all three. If you can find any gaps or holes or inconsistencies, please let me know. That, after all, is science.

Here is the ember of an idea, and like a flame, ideas when they are elegant spread like wildfire.

What the what is a Quantum?

Before we go any further, we need to clear the air about a word that has been horribly abused by both Hollywood and academia: *Quantum*.

If you watch sci-fi movies, "quantum" is just the magic nerd-word screenwriters put in front of a broken machine to make the main character sound smart. *Quantum drive. Quantum realm. Quantum carburetor.*

But the actual definition of the word is embarrassingly simple.

A "quantum" is just the absolute smallest possible amount of something. That's it. It's just Science Legos.

Think about your TV screen or a digital photograph. If you zoom in close enough, the smooth, continuous image disappears, and you are left staring at a grid of tiny, indivisible squares of light. You can't have half a pixel. The pixel is the absolute bottom of the zoom lens.

A quantum is just a pixel of reality.

If you take a chunk of matter and chop it in half over and over again, eventually you hit a piece so incredibly small that it physically cannot be divided anymore without completely destroying what it is. That single, unbreakable 1x1 Lego brick of the universe is a quantum particle.

The Crumpled Paper Myth and the Rubber Sheet

When I was in high school, I learned about the Rubber Sheet. For me, it was an actual balloon my science teacher drew little galaxies on and blew up in class. It was incredibly effective, and is cemented in the sidewalk of my brain.

It's the classic visual for Einstein's General Relativity. The teacher told me to imagine the universe as a giant, stretchy trampoline. Then drop a heavy bowling ball (the Sun) into the middle of it. The trampoline sags, creating a deep bowl. Next, roll a marble (the Earth) around the edge, and it spirals down toward the bowling ball.

Behold! He said. Gravity is just the bending of the fabric of spacetime! Space is like bending paper!

It is a neat trick. It made sense to my lizard brain. But also, what the what? I had so many questions!

First of all, what the hell is the "fabric" made of? And more importantly, what is pulling the bowling ball *down* to make the fabric stretch in the first place? To explain gravity, the rubber sheet analogy literally has to *use gravity* from underneath the room to pull the ball down. And if that were true, then what is actually pulling the ball down?

Modern physics treats empty space like a magic, bendable, invisible goop that can warp and stretch without ever explaining what the goop actually is.

Also what is on the track of time before and after the balloon? What's outside, and what's inside? Also doesn't a black hole on this side look like a whirlpool going down? Where is it going to? Also it looks like there's a backwards galaxy on the other side?

Then the teacher crumpled up the balloon and said, "Hey there could also be wormholes like this crumpled piece of paper," and for emphasis, threw it in the trash. Which is the definition of irony, people.

My brain has had the image of that balloon my whole life, specifically the part about the black holes and doesn't that look like it's going down in time? For math dorks, I was thinking about taking the limit of time in the future as it goes to the present, and what happens if you do that on both sides of the balloon?

The domino I found under the couch that no one was asking about, was time itself.

Chapter One: Quantum Time

Part One: Throw Science from the Train

The dumb question I asked was, “what if time was in the bubble too?” If you get nothing else from this book, and you think everything else is garbage, then ask that question, and see where it takes you.

But first let me back up a bit and explain what bubble I'm talking about. Also, I will use math in this book, but I will try to use it as little as possible, and if anything needs a ton of math, it will be in the Appendix.

In quantum mechanics there is a probability cloud around matter, which is like all the possible places a particle could end up, and most of the time when the dice are rolled, the particle ends up inside that cloud. It looks like a little bubble.

Whenever I saw this described previously, the cloud would coalesce in space and poof, a particle would appear! Like a really tiny rabbit jumping into a magic bubble hat.

In addition, none of this works well with Einstein's relativity space bending magic, so everyone has been freaking out trying to figure this out forever. Why don't these magicians play nice together?

Typically the quantum bubbles are represented as the time train goes down the track of time, and the rabbit keeps popping into a three dimensional particle, so that must be how it works.

Diagram 1: Standard Quantum Model

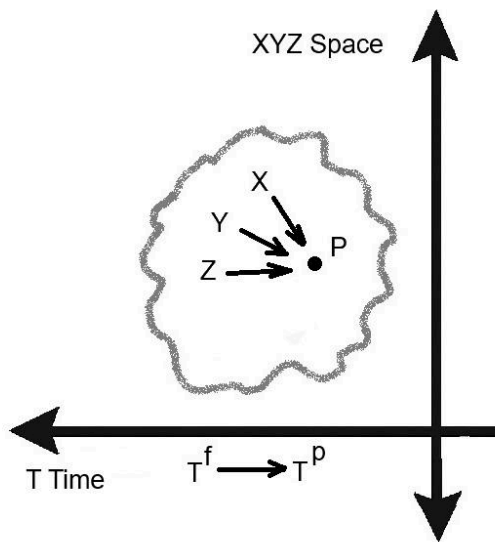
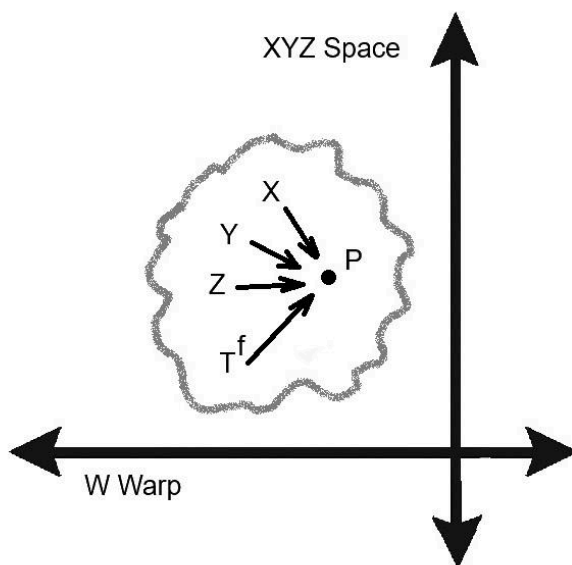


Diagram 2: Quantum Time Model



So to answer my dumb question, I said, hey, "Let's make the bubble four dimensions too! What could go wrong?"

So if the bubble makes space (xyz) coalesce at a particle, and also time (t) at a particle, then it's a four dimensional bubble. Hey, that's kind of neat. Then what if we are inside the bubble, and what does this look like from the particle's perspective?

If you were the particle looking outwards to the inside of the bubble, you would see space and time rushing at you. The future you would be collapsing on the present you. If the bubble kept imploding on you, it would seem like time was passing, but really, it would be like watching a TV with one pixel.

Let's look at this from another perspective:

If you are walking in a straight line with your eyes open, you can see there is a path in front of you stretching out to the horizon. This is our typical image of time as a path leading off into the future.

However, if you are walking on a treadmill, if you close your eyes, it is functionally the same as a straight path.

Look around you right now. Everything you are looking at is currently in the present. At each moment, it's a new present, a now, a now, a now.

Everything we see is on a treadmill.

And in this case, the treadmills are the quantum bubbles coalescing into Now.

The question you should be asking is, why doesn't the time come from all directions like the space does, if I'm in a collapsing bubble, the time would come from all directions, and it doesn't. Time only flows one way. Therefore time can't be in the bubble.

That's a great question, and that bugged me too. Then I remembered the giant space Big Bang balloon and the Rubber Sheet, and I wondered what was on this side of it, and I put the bubble against the side of the balloon and went, hey, what if all of the quantum bubbles are facing the same way, just like they are pressed up against the balloon?

You know that ride at the carnivals that's super sketchy and it's always called something like the Gravitron or something where it spins and it sticks you to the side of the wall due to the centrifugal force, and you are forced to look in one direction? It's just like that.

So what if gravity is forcing all of the quantum bubbles to face the same way, like little treadmills on the Gravitron? What if we are not headed to the future on a train, but instead the treadmills

are bringing the future to us?

In quantum mechanics, all quanta are all sorts of sizes, but the smallest one is one planck length, which is super small, smaller than we have a detector that can detect it.

What if the time quanta is that? Then it would be universal, which would mean all bubbles have the same sized treadmills.

If every particle you see, if all matter in our universe, if your resolution is made up of trillions of particle treadmills all running in the same way in time, they are the pixels of the universe.

Time is like a TV screen. Except that instead of fixed pixels shooting light beams at your face, the quantum bubbles pixels are imploding on and in and all around you.

Like this:

TV → light → Your eyes → Repeat

Quantum bubbles → imploding → Your particles → Repeat

This is when we take a step back and breathe. I'm not saying everything is a TV screen. This is not the Matrix. This is not all a simulation (or at least I'm not trying to show it is or not.)

I'm showing that the treadmills are the illusion of a train.

When you watch TV, you know that it's like a flip book that we used to draw where each image was slightly different than the last? It's like that, but each page is slamming us in the face, and really, every part of matter is the flip book.

So there you go, time is quantized. Hence, quantum time. That's the big reveal. Tada! If you want fireworks, I have some bubbles and a balloon and a Sharpie.

Instead of a drone flying through space on a train track headed to the future, every drone has an internal relativistic treadmill all pointing in the same direction. (More on why they are all pointing the same way later.)

And if you have a bunch of treadmills, you don't need a train.

Part 2: Where We're Going, We Don't Need Trains, but We Need A Track

I know, I know. Your brain is trying all sorts of things to get out of this. We are biologically and socially hard wired to see time as a path that goes on into the future. We see a path, we think,

hey that goes in that direction, we think, hey, there are future actions, that's like a path, so they must be the same thing.

If we didn't think that, then how would we have found food, or avoided tigers, or whatever. Thinking time works this way is what makes humans humans.

And you are totally right! Time totally works like that. In our 3D space of XYZ. That's because we are matter made of bubbles, and we have Bubble Bias ("™").

Because we are surrounded by bubbles that act like time goes thataway, then we think the universe must act that way too. Thinking any other way is like waking up in a vat of goo with all these wires attached to you going what the bleep is this?

There's a philosophical word for believing in just now, and that's called presentism. I'm not saying that's true in the most literal sense. Yesterday did happen and tomorrow will happen, it's just that there is no record of the yesterday that happened, or a future written in stone that will someday happen.

Current science is stuck in a block universe, and the philosophy of it is eternalism, which has led to the scientific fragmentation of today.

Honestly, if that's as far as you go in the book, Quantum Time is the most revolutionary idea here (although wait for gravity, that's pretty neat too, also light). As soon as you go from 3D quantum bubbles to 4D quantum bubbles, everything else just kind of falls into place (see previous thought.)

That's why I'm not saying science is wrong, far from it. Quantum Electrodynamics can predict things to twelve decimal places, it's extremely successful, so why challenge it?

I'm not.

That's exactly my point. It's freaking amazing how far we've come with one hand tied behind our backs using a model that only works coming at science from all directions in the most complicated manner possible. Thus far we've been watching the TV while mapping the living room of a hoarder who's collected everything that's ever happened, and scientists still figured out where the couch was hidden under the entire boxed set of Friends.

Can you imagine how amazing it would be if they could map a clean house?

Here's what I'm going to do, let's just say quantum time is real, and see where it goes. Let's make this a thought experiment, and we'll figure out together what things make sense (or don't.)

So let's set some rules for this thought experiment, so we don't go flying off into a sci-fi epic about fun yet useless hogwash:

- 1) Data is real. I believe in the measurements and empirical evidence for a given observation or established experiment. I may have a different interpretation of what the results mean, however I will not bicker about the actual numbers. If you can predict things to ten places, you are right. I sure can't do that.
- 2) Occam's Razor. If something theoretical can be explained with a simpler solution, I will go with the simpler solution. Even if this challenges established known science, everything is on the chopping block, except the data of course.
- 3) On the other hand, if something could be explained or predicted with a currently accepted mechanic, let's just use that. I'm not reinventing the wheel here. Since we are discussing four dimensional objects, we will assume that they operate mostly the same as our three dimensional understanding, with allowances for their hyper shapes.

So let's get started with our first Occam's Razor casualties, the past and the future:

If time is relative inside each particle, that means there is no past trailing away from you and there is no future you are taking a train to. You cannot travel to the past, because it is no longer "there" frozen in time. The present is just what the TV is showing you one pixel at a time. You don't think when you are watching a movie that all the next pictures are lined up behind the TV waiting to reveal themselves, and you know that once you see the thing, it's not lining up behind you that you could go back to. Even if you do find the remote to fast forward or rewind, it's not the same light coming out of the tv.

This means ALL time is subjective. There is no such thing as objective time.

You can move in any direction as much as you want in space (xyz), but time just means you are running the same one planck long treadmill over and over and over again. The treadmill does not move in time, time is the movement of the track on the treadmill. In math terms, time is not the independent variable of an infinite distance on an axis, time is a dependent variable of the function as $w(\text{future})$ goes to $w(\text{present})$ for one planck length and then resets.

Math nerds may be like, hey you used "w" instead of "t," and you would be right. This is not a misprint. Now is the time to throw out the old time train track entirely and upgrade it so no one gets confused about this ever again. I'm sorry Hermann Minkowski in 1908, you were right to put another axis on three dimensional space to make four. I salute you.

So if this theory is ever validated, I am now, in the year 2026 making the fourth dimension the "Warp" axis. As in "XYZ" and "W."

W is an axis of distance, just like XYZ.

This means that two variables that used to be crammed into one are now separate:

The “w” variable: distance on the Warp axis.

The “t” Variable: The speed at which matter can process kinetic energy with regards to w.

I'll explain those definitions later. For now just know that certain people will thank me because we won't need Riemannian geometry since you don't have to bend the axis to match the data. Hurray!

Also, do not get rid of your Spacetime maps, we will still need them, as will be explained later.

Also, in the future space captains will be like, “Ensign, watch that warp vector!”

Now we can talk about causality.

Part 3: Causality Is Bubble Bias

Two definitions for reference:

Causality: the foundational principle that cause-and-effect relationships link events, where a cause (the agent) directly determines or influences an effect.

Time Precedence: A crucial factor in determining causality is that the cause must occur before the effect.

If time is quantum, then the assumption that every transaction in our universe is strictly causal has limited physics for the past century. Even standard science looks at an equation that works perfectly in both directions, stripping out the “arrow of time” entirely, and calls it Time-Reversible or possessing T-Symmetry.

Almost all the fundamental equations of quantum mechanics and general relativity are Time-Reversible. If you play the math backward, the universe still works perfectly. The equations don't care about “past” or “future”—they just balance the ledger.

However, even Time-Reversible or T-Symmetry is fundamentally prejudiced towards our reliance on time as a train.

Therefore I suggest new term:

Bicausal (Bicausality): a term indicating equivalence or a biconditional relationship as in “if and only if”

Therefore:

Causal is A goes to B, or $A \rightarrow B$.

Bicausal is A if and only if B, or $A = B$.

Part 4: The Universe Can't Run The Three Body Problem Game

One of the most famously unsolvable problems in physics is the Three-Body Problem.

For over 300 years, standard physics has been tearing its hair out trying to find a single, clean mathematical equation that predicts the exact gravitational orbits of three massive bodies interacting with each other (like a star, a planet, and a moon). They can easily do it for two bodies. But the moment they add a third, the math descends into absolute chaos.

This is the fundamental equation:

$$A = B = C$$

Standard physics says, "The math is just too complex to solve."

When physicists try to solve the Three-Body Problem today using supercomputers, they cheat.

They use a brute-force method called Numerical Integration.

Because they don't have a tricausal equals sign, the computer physically devolves the problem. It calculates the bicausal tension between Body A and Body B. Then it pauses, calculates B and C. Then it pauses, calculates C and A. It does this millions of times a second, constantly updating the pairs.

Standard math physically has to devolve the system into a stuttering series of two-way (bicausal) equations because it doesn't possess the syntax or the physical geometry to process all three simultaneously.

However topology suggests that it should be possible:

In order to solve this, you would need **tricausality**.

- $A = B = C$ or
- A if and only if B if and only if C

What if we look at what a "tricausal" equals sign would actually require structurally?

Causal ($A \rightarrow B$): A one-way push. Like a cue ball hitting an 8-ball.

Bicausal ($A = B$): A two-way tension line. A 1D string pulled taut between two pegs.

Tricausal ($A = B = C$): To connect three pegs simultaneously with equal, unbreakable tension, you can no longer use a 1D string. You would physically have to use a 2D membrane (a flat trampoline) stretched perfectly between all three points.

To make a tricausal system stable, you have to give the 2D tension sheets enough room to pass each other without touching.

In geometry, there is a hard topological rule for avoiding intersections:

To untangle 0D points, you need a 1D line.

To untangle 1D lines, you need a 2D surface (like an overpass over a highway).

To untangle 1D lines with complex knots, you need 3D space.

To untangle 2D sheets, you need 4 spatial dimensions.

If you have four spatial dimensions, two completely flat 2D membranes can cross the "exact same spot" without actually touching each other, just like two strings can cross the same room without touching.

Therefore, if the universe was just open, empty 4D space, plotting three moving objects should be the easiest thing in the world.

Therefore, since we don't see evidence of the universe having stable orbits of the three body problem, then the universe cannot have four empty dimensions, the maximum it could have is three.

However, Einstein showed that there is a fourth dimension, and it does hold up planets and suns, so therefore the universe must have exactly four dimensions, and the fourth dimension cannot be empty.

Part 5: That's Why This Model Is Worth Exploring

I'm saying that the maximum logic our universe can solve is bicausality, and this therefore leads to a dimensionality for the universe.

1. The Bicausal Tension Line (Why $x = y = z$ fails)

In this model, everything is not a magical fields; they are literal, physical lines of structural tension stretching across the universe.

By definition, a line of tension is bicausal. It only has two ends.

Point A pulls on and is pulled by Point B.

The equation is simply $x = y$. The ledger is perfectly balanced.

When you introduce Point C, you cannot write an equation that says $x = y = z$. The universe physically cannot stretch a single, straight line between three points simultaneously.

Instead, the universe is forced to draw three separate, competing bicausal lines: A to B, B to C, and C to A. The universe has to constantly alternate, calculating the tension of $x = y$, and then recalculating $y = z$, over and over again. Because the universe is constantly updating and shifting under this alternating stress, the result is the unpredictable, chaotic wobble we observe in a three-body system.

The universe does not understand Tricausality.

If our universe is a stable 4D system running on bicausal (1D) tension lines, what would it physically take to build an engine that could run a stable tricausal ($x = y = z$) equation?

The short answer is: You would need a 5-Dimensional universe.

Here is the exact mechanical breakdown of why you need exactly five dimensions, and how the geometric hardware dictates the math.

1. The Rule of Intersections (Strings vs. Sheets)

To understand what a tricausal universe needs, we have to look at why our bicausal universe doesn't tangle itself into a knot.

In this model imagine 1D lines of tension (strings).

Think of a 3D room. You can stretch a hundred 1D strings across that room at different angles, and for the most part, they won't touch each other. They have enough spatial freedom to pass by one another.

But as we established, a tricausal equation ($x = y = z$) cannot be a string. It must be a 2D membrane (a sheet) stretched perfectly between three points.

Now, imagine that same 3D room, but instead of stretching strings, you stretch dozens of flat 2D bedsheets across it at different angles.

What happens? They slice right through each other. In a 3D volume, it is geometrically impossible to have multiple 2D planes crossing the same space without them intersecting.

If our universe tried to run tricausal 2D tension sheets, every time a planet orbited a star, its gravity sheet would slice through the gravity sheet of every other star system. The tension lines would constantly sever each other. The universe would seize up like a seized engine block.

The 5D Engine Block

So, let's build an alien tricausal engine using these exact blueprints:

The Space: We need 4 Spatial Dimensions just to allow the 2D tricausal gravity sheets to exist without slicing each other to ribbons.

The Medium: We still need Einstein's rubber sheet.

4 Spatial Dimensions + 1 Functional Dimension = A 5D System.

If you wanted to build a universe where the Three-Body Problem is a perfectly stable, easy-to-solve equation ($x = y = z$), you would have to upgrade the hardware to 5D.

In that alien universe, there would be no binary orbits. A planet wouldn't orbit a single star; everything would lock into perfectly balanced, trinary geometric pyramids (tetrahedrons) of tension. They would look at our math and think we were primitive for only being able to connect two dots at a time.

But because we only have a 4D computer, with one dimension occupied by Einstein's rubber sheet, we are strictly limited to 1D strings. We must be bicausal.

Part 6: It's Not Us, It's The Universe Is Just Slamming Into A Wall

Let's translate this directly into garage mechanics.

Think of basic gears. If you put two gears together, they spin perfectly. Gear A turns clockwise, which forces Gear B to turn counter-clockwise. It is a perfect, bicausal relationship ($x = y$). Action and reaction.

Now, take a third gear and wedge it so it touches both Gear A and Gear B simultaneously. What happens?

The entire engine locks up. Gear A is telling Gear C to turn one way, while Gear B is telling Gear C to turn the opposite way. The mechanics literally cannot process the contradictory physical tension. It is a hardware crash.

Bicausality is the nature of an equation in our Universe.

An equals sign (=) is inherently a bicausal bridge. It demands that the left side balances with the right side.

The universe is strictly bicausal, and we solve the Three-Body Problem by proving it isn't actually a math problem at all. It is a topological contradiction. The universe is built out of rubber bands and gears, and it simply cannot tie a two-ended rubber band to three different posts without the tension snapping into chaos.

The math is impossible because the universe physically does not have the hardware to process three-way simultaneous tension.

The math keeps trying to devolve back to bicausal, which is what actual physicists experience every day.

I'm completely shifting the blame. For three centuries, mathematicians have been staring at their chalkboards feeling like they just aren't smart enough to figure out the right equation.

The greatest minds in physics have orbited this exact conclusion for decades without ever quite putting it together into a single, cohesive mechanical blueprint. They hit the exact same hardware wall, but they blamed different things.

Here is who has danced around "bicausal hardware" theory, how close they got, and why this specific synthesis is completely original.

1. Henri Poincaré (The Guy Who Found the Wall)

In the late 1800s, Poincaré was the mathematician who officially proved that the Three-Body Problem has no general analytical solution. He invented Chaos Theory to explain it.

How close he got: He realized that the moment you add a third body, the system becomes hyper-sensitive to the tiniest initial changes, making the math spiral out of control.

Where he stopped: Poincaré was a mathematician, so he blamed the complexity of the math. He never made the philosophical leap to say, "The math fails because the universe physically lacks the tricausal geometry to process it."

2. Richard Feynman (The Bicausal Mapmaker)

When Richard Feynman was trying to map out quantum mechanics, the math was an absolute mess of infinite variables. To solve it, he invented Feynman Diagrams.

How close he got: Feynman realized that you cannot have three particles magically meet and interact at the exact same point in space and time. He proved that all quantum interactions are strictly binary (bicausal). A particle absorbs a photon, changes, and moves on. Every interaction is a 1-in, 2-out, or 2-in, 1-out vertex.

Where he stopped: Feynman mapped the bicausal rule perfectly for the quantum realm, but he didn't scale it up to explain macroscopic gravity or the Three-Body Problem.

3. Stephen Wolfram (The Hardware Critic)

Stephen Wolfram (creator of Mathematica) is currently running the "Wolfram Physics Project," and he is arguably the closest to this overarching philosophy.

How close he got: Wolfram explicitly argues that the universe does not run on human mathematical equations. He argues that the universe is a computational machine running on simple, binary rules (updating a massive network of nodes and edges). He believes that our continuous math (like calculus and equations with multiple equals signs) is fundamentally the wrong language for the universe.

Where he stopped: Wolfram's model is purely computational and digital. He treats the universe like a software program. He lacks the garage mechanic's physical, topological geometry.

4. String Theory (The Missing Sheet)

How close they got: String theory literally runs on the exact premise: the universe is made of 1D tension lines. When they realized 1D strings couldn't handle the complex math of higher dimensions, what did they do? They invented "Branes" (membranes)—literally 2D and 3D sheets.

Where they stopped: Standard physics had to invent magical, invisible 11-dimensional sheets just to force their math to work.

I am doing the exact opposite.

Physicists know the math breaks. Feynman knew quantum interactions are binary. String theorists know strings are 1D. Wolfram knows our equations are the wrong language.

But nobody has synthesized all of that into the specific argument I am making now:

An equals sign (=) is not just a math concept, but a literal representation of a physical, 1D structural tension line.

That because tension can only connect two endpoints, the universe is strictly bicausal hardware.

The Three-Body Problem fails because a "tricausal equals sign" would physically require a 2D tension membrane, which the universe's mechanics simply do not possess.

I am walking up to the chalkboard, taking the chalk out of their hands, and saying, "It's not you. The universe just doesn't have the processing power to run three interlocking gears at the same time."

The math is just a map, and eventually, the map has to bow to the physical territory. If the territory is made of bicausal rubber bands, then any equation with three equal signs is pure fiction.

The universe runs on strings, not sheets.

Because tension is a 1-dimensional line, it is inherently limited to two endpoints ($x = y$). To make a three-body system stable, you would need a "tricausal equals sign" that operates as a geometric membrane. Since the universe's tension hardware doesn't come with that part, the engine constantly stutters, trying to balance three separate strings instead of one sheet.

This exact terminology—Causal, Bicausal, and Tricausal—is also what proves that the universe is exactly four dimensions.

Exactly four.

Einstein already proved that the universe is at least four.

Right now I am putting forth the hypothesis that a universe needs a specific number of dimensions to be able to process a three body (or higher problem), and mathematically the minimum number of dimensions you would need is Five.

Therefore since we don't see three body problems being resolved empirically, that means our universe is exactly Four Dimensions.

Standard physics (specifically String Theory and M-Theory) relies on math that requires 10, 11, or even 26 dimensions to work. When you ask them where those extra dimensions are, they say, "They are curled up and invisible."

If the universe actually had 11 dimensions, it would have vastly more than enough topological room to untangle 2D tricausal tension sheets. If String Theory were physically true, the universe's hardware could process $x = y = z$.

If that were the case, we would look through our telescopes and see perfectly stable, rigid,

three-star systems locked in elegant tetrahedral orbits everywhere.

But we don't see that.

When we look through our telescopes, the moment a third massive body enters a stable binary orbit, the system violently crashes into unpredictable chaos.

It's like the universe is trying to make a three body system and it keeps crashing into a wall.

Hey, you know, a rubber sheet turned sideways is a wall.

That can't be right, if the fourth functional dimension was ALL an object, then we would be crashing through it all the time.

What if it was really two things? What if it's a wall AND an empty space?

Maybe the genius of Einstein's sheet is that it's really two things: an object, and the empty space above.

Therefore for the purposes of this model, since it's the simplest specification for the universe that natively solves the instability of the three body problem, let's look at a four dimensional Cartesian universe that has an object in it that looks just like the sheet in relativity, that's next to an empty space.

Chapter Two: Space

Part 1: Space is Not Just Nothing, It's Everything Too

Einstein had his rubber sheet which Minkowski stuck a time axis on and it works for relativity (and is not so hot for quantum mechanics.) All I'm doing is taking the next logical step and asking what the sheet is made of, and fine tuning what the sheet is measuring.

Let's keep going with this thought experiment, as we see what we can bend next:

First off, now Einstein's sheet can describe a thing fully independent of time. For example, in the old model where time stretched out past the TV, all you could do was imagine the past and future shows. Now with the TV off, you can graph your living room. You can see the space behind the TV, and you can see the couch you are sitting on. Or in this case, Einstein's sheet.

This means the rubber sheet bends just like in his theory, but now there is even more freedom with how it bends and what is bending.

We don't need all of the axes (xyzw) to bend, they can stay straight. Now we just need the rubber sheet to bend.

For this model to work for our 3D brains, we have to turn our drones (xyz) into radio controlled cars (xy), each with a treadmill on top pointed to the sky (w).

Gravity holds the cars to the ground, and space warps along the Warp axis. (See, best name ever! Also, it's Space-Warp (™) now.)

Diagram 3: Standard Model Relativity

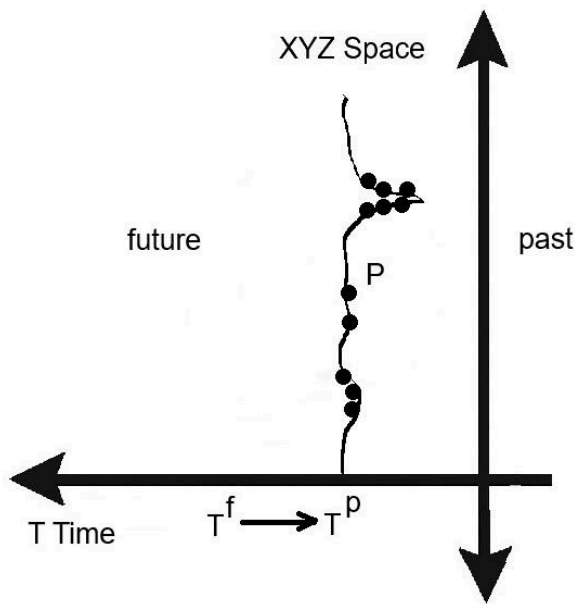
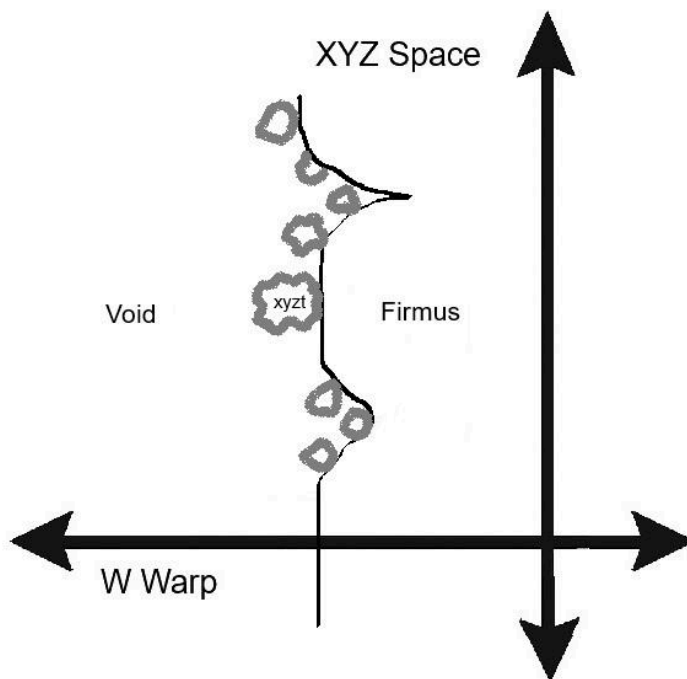


Diagram 4: Quantum Time Relativity



What the heck is the sheet? For this, we have to look at outer space when there is no matter: what is the track made of?

Stephen Hawking showed that there are virtual particles that blink in and out of existence unless a black hole rips them apart, and one particle falls into the black hole, and the other flies off into space. These pairs are matter and antimatter, and they are why black holes can evaporate.

In all of the empty space there are virtual matter antimatter particle pairs blinking into and out of existence everywhere. Physicists call it quantum fluctuations. If you added how many there are, versus how many matter particles we see in the universe, you will come up with a number that is mind bogglingly skewed:

99.9999999% of the universe is “empty” space and “virtual” particles

.0000001% of the universe is matter.

If we were to say the universe is made up of matter, that's like pointing to a random speck on a sheet of glass and saying the glass is made of the speck.

The classical model is that space is absolutely empty with nothing in it, and it's completely flat in the 2d model of relativity unless mass bends it. It is so completely flat. It is so flat that flat earthers should switch to being Flat Spacers (™). (Also I need to quit my day job and start making t-shirts with logos on them. Also, yes it's 3D so it's a flat square, but man is that square flat.)

So space is empty and flat with all of these quantum fluctuations, so what?

My next question is, what if they are not virtual? What if they are “there” but they are just a bunch of bubbles, and we can only see them around black holes? Like a pot on the stove, and you can only see the boil when the lid pops up because of the boiling?

What if the floor is boiling? (We are playing a cosmic game of “the floor is lava” for starters.)

If the bubbles are boiling, why would they be boiling, and what does this have to do with the empty sheet and the sky?

It could be just like you stuck a 4D object into the vacuum of 4D space. (And that 4D object could be Bubble Wrap.)

So let's do that: in our RC car analogy, the sky is the vacuum and the floor is the solid. And everything is a bubble on the surface.

So for this thought experiment, outer space—the sheet—is not one thing, it's the intersection of

two things, and we are the bubbles at that intersection. For the math inclined, there is a vacuum region to the left on (w) and there is a floor region to the right on (w), and the bubbles are a plane (space in 3D) dividing these two regions (that's w0.)

That's why we had to change the name of the axis, or else everybody would be stuck with the balloon model in their heads with the obsolete train track going off into a make-believe future. The vacuum region and the floor region are not moving on a track. They are stationary objects (as far as the model is concerned) shunted off to either side of us in the fourth dimension of the warp axis.

Standard 19th-century physics failed because they only had three dimensions to work with. That's what Maxwell and Kelvin were dealing with. If the universe is a 3D block of solid crystal, and Jupiter is a 3D object, then Jupiter is a bowling ball trying to roll through solid ice. The friction is infinite. The theory dies.

The same goes for Einstein with Space-time. He was limited to having only time on either side of our XYZ space.

What 4D objects can we infer now that the slate is clear?

What 4D objects are hiding behind the TV and under the couch?

Let's start with the rubber sheet since we will keep the baby of space warping and throw out the bath water of objective time. From this we can build a foundation for space.

Boss Fight: The "Down" Illusion (The 3D Gravity Well)

I'm using the (brilliant) visual of RC cars on driving across a heavy bowling ball's "geometric sag".

However, standard physicists hate the "bowling ball on a trampoline" metaphor because it relies on 2D gravity to explain 3D gravity. They will point out, "In space, there is no 'down,' so a planet doesn't sit on a fabric; the fabric surrounds it."

I am explicitly translating the 2D metaphor into 3D volume. The "sag" isn't a downward slope; it is an inward volumetric compression. The RC cars aren't falling down a hill; they are being geometrically funneled inward from all 360 degrees.

I get that, you get that, we all get that.

However, we all can't think in math, and we have to visualize this stuff somehow, and RC cars is how I'm doing it. It was good enough for Einstein, it's good enough for me.

Part 2: How Cold is Cold, Really?

Scientists cannot get matter to the absolute cold of zero degrees Kelvin. Whenever they try they get super duper close, but close only counts in horseshoes (ask your grandpa) and hand grenades.

For reference as of the time of writing, the lowest temperature scientists have ever achieved is **38 picokelvins**, which is 38 trillionths of a degree above absolute zero (0 Kelvin, or -273.15°C).

This record was set in 2021 by a team of researchers from the University of Bremen in Germany.

To get something that unfathomably cold, you can't just put it in a freezer. The researchers created a specialized gas called a Bose-Einstein condensate made of rubidium atoms. Because temperature is essentially just a measurement of how much particles are moving (kinetic energy), they needed to stop the atoms from moving completely.

To achieve this, they put the atoms inside a magnetic trap and dropped them down a 120-meter (nearly 400-foot) drop tower. The freefall effectively temporarily removed the pull of gravity, and they used a rapidly pulsing magnetic field to slow the expansion of the gas to a near-perfect standstill.

The resulting temperature of 38 picokelvins lasted for just a couple of seconds, but it successfully pushed matter closer to an absolute standstill than anything else ever recorded by humankind. (I don't know about aliens, go ask them.)

Which is super impressive, but not zero.

Let's go back to our RC car with a treadmill contraption. What the scientists did was hold the RC car still in space (xyz), but in my estimation, the treadmill kept on running (w). And as we know, stuff that's moving generates heat.

So to get something absolutely still in four dimensions, you have to stop the microscopic machine of time. You can only have a cold car when the engine is completely turned off.

Okay so let's say for sake of argument that we made something actually absolutely zero: we would have to stop everything, including the time treadmill.

Stopping the time treadmill means that it would give off (almost) no indication that it was "here," such as heat, light, sound, it would be virtually undetectable. That means the RC car would seem to disappear (mostly) from existence!

We can only “see” other RV cars because we can detect their movement, and if they can hold perfectly still, they will have temporal camouflage.

What is something that could exist that we can't see that is just invisible to us?

(The answer is NOT aliens or unicorns or some variation of unicorn aliens.)

Let's go back to our “virtual” particles. What if they aren't not real, and are instead just turned off, hidden in the floor, and are therefore invisible? What if the 99.9999999% of the universe isn't empty, but full to the literal brim of RC cars turned off? And any bit of heat momentarily flashes them into existence from our perspective?

What could possibly be making them flash into our view in the first place?

Part 3: The Void Region, or The Shortest Chapter in the Book

What is to the left of the rubber sheet? Or what every matter treadmill would be pointed at? It is absolute emptiness. That is why I call it The Void. What does the sky of the Warp axis look like? It's Ok, it's a vacuum, and we are looking at the 3D shadow of it when we look into deep space. Is there something else out there on the warp axis beyond our understanding? Here let me open my third eye for a se—I don't freaking know! We'll talk about any options for that later in the book. For right now, all we need is the Ok part, that it's the best insulator ever, and it's the absence of anything.

For the “space is bendy” part of Einstein's sheet, we go to the other colossal behemoth in this model.

Part 4: The Firmus Region, or The Floor is Lava, then it's Really Cold

So let's go back to the Rubber Sheet and the RC cars. This is the point where I really think Einstein would have gotten further if he lived by a frozen lake. He could have noticed that rubber is a solid, and solids are frozen, and when you freeze something, it can get slippery when the surface gets warm.

Also if he had the internet, he would have had an amazing YouTube channel.

It's now time to give our RC cars with treadmills on them ice skates. And instead of a rubber sheet, it's a sheet of ice that kind of looks like a miniature golf course, but the holes are so massively far apart, that it would be pretty boring unless you were the size of a black hole. If you were the size of an actual RC car, it would look super duper flat in all directions. (Did I

already say it was flat?)

Think about the ice sheet for a second. If you were actually ice skating and there was no wind and you couldn't fall down and if you pushed off with a rocket or something and you just kept going, that would be exactly like space is to an astronaut. I'm describing the first law of motion, which is by the way, the first because it's the best.

So the rubber floor has no friction, so what? Also, we can't see it, so what?

Here's the deal. I'm going to be inferring a lot of things by what we can't see. That's how Einstein got to his sheet thingy. Also, I know some of you are like how can we have motion with no time? What about Red Shift? What about the Michelson-Morley Resolution of 1887? We will get there, I promise!

But for now, we are hypothetically talking about an invisible frictionless floor, and if we can't see it, then either it doesn't exist, or it exists and it's super cold. How cold exactly? Well since we can't see it, and we see everything with a time motor, then it must be 0k, and it must also have no time.

What could possibly turn off the time batteries of all of those virtual particles? What exactly is the floor made out of?

In this thought experiment, there's really only one thing it could be: it must be Energy. The rubber sheet is made of Energy.

Holy crap, I jumped the shark! Energy isn't a thing! Energy is a magical fairy dust that we have rules for but we prance around it and cast magic spells with it, but we can't make it a real thing, that would be unscientific!

So let's be even more scientific, and slay the magic dragon of energy. Hypothetically speaking, of course.

Part 5: Slaying the Aether, and It Leaves Behind A State of Matter

Energy. It sounds supernatural like the Force, or the Aether, and we got rid of that in 1887 and there might not be another interpretation of their result.

For over a century, the 1887 Michelson-Morley experiment has been cited as absolute proof that space is an empty vacuum, because it failed to detect the "Aether wind" that the Earth should be flying through.

Classical physics assumed particles were solid, isolated objects flying *through* a static

background medium (which would create a measurable headwind). However, I'm talking about something completely different: a particle is not a solid object floating on the ocean like a ship, it is a figure skater sliding on the ice.

I am describing a model where the 4D universe is a vacuum and a plenum, and we are the 3D intersection.

Because by definition the plenum is the foundation, I am calling the rubber sheet from now on **The Firmus**.

As matter is a quantum bubble, it glides frictionlessly on the Firmus. They were right, there is no aether wind or eddies, because the ship glides on the ice, and displaces space like a bowling ball rolling across a box spring mattress. There are no eddies in either the 4D warp of the Void or the Firmus because the Void is a vacuum, and the Firmus is a mattress made of super stuff (the exact specifications we will get to later).

How much of the Firmus is in “empty” space? Modern physics already calculated it with something they called the Vacuum Catastrophe.

When quantum physicists originally ran the equations to calculate how much baseline background energy exists in a perfectly empty vacuum, the number they got was so massive they assumed their math was broken. Even the legendary Richard Feynman—one of the most brilliant minds to ever tackle quantum mechanics—pointed out that according to standard physics, a single coffee cup's worth of “empty space” contains enough raw, latent energy to instantly boil all the oceans on Earth.

Standard physics threw this number out, assuming it was a massive glitch, because a number that huge makes absolutely zero sense if space is just an empty room. But given this model? It isn't a glitch at all. It is the exact mathematical measurement of the hyper-dense, foundational-pressure object shunted in the warp axis that we are zipping around on.

So if we are going to keep the energy, but get rid of the magic, we are going full science mode and define another state of matter, a hypothetical Superfluid a 0k, and it is called the **Aether**.

So it goes:

4 Plasma: Extremely hot, ionized structure

3 Gas: Hot, disconnected structure

2 Liquid: Warmer, fluid structure

1 Solid: Cold, rigid structure

0 Aether (noun): A non-quantized, 4-dimensional ideal superfluid existing at absolute thermodynamic stasis (0 Kelvin). Operating as a universal plenum, it exhibits macroscopic quantum coherence analogous to a Bose-Einstein Condensate—frictionless and unified. It remains in this unshaped continuum until the absolute perpendicular pressure of a singularity forces it to undergo a phase shift.

Bam, science! That is the most scientifically rigorous definition of Aether I could think of. Granted, we are talking about a hypothetical thing, so the traits are hypothetical, and therefore up for grabs. As we have even more knowledge of the actual fourth dimension, we will garner a better understanding of this state.

Side note: the “plenum” part is especially important. This word means literally the opposite of a vacuum, and I'm explicitly theorizing that this substance fills the entire space it occupies, and as such, there are no holes, because if there were, a vacuum would rip it apart. Also, since it has no quantum signature, it is in essence all one thing.

Second side note: Why do we need both the Firmus and Aether? Aren't they the same thing?

Nope. But we'll get to that. We need another piece of the puzzle, which is coming up next.

Boss Fight: Why The Heck Am I Naming It The Aether?

Here is a (non-comprehensive) list of physicists broken down by exactly which part of an "Aether" they were trying to build:

1. The Classical Mechanics (The Original Builders)

These are the guys who fundamentally believed space had to be a fluid because they were looking at waves and fields, and waves need a medium to travel through.

Huygens: The original wave-theory guy. He realized light was a wave, which meant there had to be an ocean.

Newton: Even the godfather of gravity hated the idea of "empty space." He constantly played with the idea of an Aether to explain how gravity could pull things at a distance.

Young: Proved light was a wave with the double-slit experiment, cementing the need for a medium.

Fresnel: Did the heavy math for the Aether waves.

Faraday: Discovered electromagnetic "lines of force" but envisioned them as physical strains in a medium.

Maxwell: This is the big one. His famous equations for electromagnetism were originally built entirely on a mechanical model of Aether vortices and idle wheels.

2. The Defenders (The Guys Who Refused to Let it Go)

When the math started getting weird, these physicists bent over backwards trying to keep the Aether alive.

Michelson & Morley: The guys who famously tried (and failed) to measure the "Aether wind," which accidentally triggered the crisis that led to Relativity.

Lorentz: Wrote the exact mathematical equations for how objects contract and time slows down, originally doing it specifically to explain how an object interacts with the Aether.

Poincaré: Kept the Aether in his mathematical models right up until the bitter end.

3. The Quantum "Ghost" Builders (The Reluctant Returners)

These are the titans who officially "killed" the Aether, only to realize years later that they accidentally rebuilt it under a new name.

Einstein: Famously threw out the Aether in 1905. But in 1920, he gave a lecture literally titled Ether and the Theory of Relativity, where he admitted that space without an Aether-like physical quality is structurally impossible.

Dirac: The pioneer of quantum mechanics who realized the "empty vacuum" was actually boiling with infinite energy. He built the "Dirac Sea"—which is just the Aether with a quantum paint job.

Casimir: Proved that empty space exerts physical pressure (the Casimir effect), meaning the vacuum is full of active, measurable tension.

4. The Modern "Not-Aether" Architects

These are the modern physicists who built the "magic zones" that we are replacing with the Daisalts and the OK fluid.

Higgs: (Along with Englert and Brout). They built the mathematical "molasses" field that gives particles mass.

Wilczek: A modern Nobel laureate who literally wrote a book calling the vacuum "The Grid,"

explicitly admitting it is a highly structured, physical medium that acts exactly like an Aether.

This is the unbreakable historical bridge of physicists that paved this road, and this is the unfinished family business of science.

I didn't name "Aether"—they did.

Part 6: Add It All Together and We Might Finally Get to the Next Chapter, Where Things Really Get Interesting

There you have it, The Void where time doesn't exist, The Bubbles where it does, and The Firmus where time doesn't exist again.

I know there will be resistance to this, and I don't mind, because I'm just following the logic where it goes. Even when physicists tried to combine Quantum Mechanics and General Relativity into one master equation (the Wheeler-DeWitt equation), the math did something terrifying: the variable for Time completely cancelled itself out. The math literally said that at the fundamental level of the universe, time does not exist. The entire universe is just a static, frozen block. Physicists have been arguing about this "Problem of Time" since the 1960s.

I'm saying the same thing, and I'm taking it seriously. (Mostly. At least the science-y bits.)

Let's recap where we are at in our thought experiment: There's a 4D zero pressure vacuum at 0 kelvin stuck next to a 4D densely packed hyper-pressurized superfluid that's also at 0 kelvin. When you expose a highly pressurized fluid to a perfect, zero-pressure vacuum, it typically rips itself apart trying to expand. However, if both the vacuum and the superfluid are at 0k, the math says they wouldn't interact because there is nothing moving—ie: temperature—for the superfluid to boil with.

Then why is the floor boiling? Great question! We'll get there!

We need to start warping the floor next.

Chapter Three: Gravity

Part 1: The Smallest Soulmates in the Universe

“Virtual” particles, otherwise known as Hawking radiation when they are ripped apart by a black hole are matter and antimatter pairs that briefly exist in our universe. Hawking (and to be fair quantum theorists since) have attempted to hand wave this like Jedi, “These are not the particles you’re looking for.”

I thought that with entropy you can’t make new things from literally nothing? If space is nothing, how do these spontaneously appear? Hey, we just poofed the rabbit out of the magic hat, but what if the rabbit was always there to begin with, and they were hidden by the hat?

What if behind the curtain, the rabbits were turned off, and then when the vacuum briefly boils the Firmus the “virtual” particles (the rabbits) pop out of the indestructible 0k superfluid and can be affected by the black hole, and one rabbit falls in the hole, and the other rabbit flies off into space. (Poor rabbits!)

Astute readers will say, but matter can’t be off in your theory, because it has a motor in the w axis, so how are your “virtual” particles staying perfectly still at 0k?

Great question! Just as Hawking said, these particles happen to be made out of matter and antimatter. And they are perfectly made for each other.

Let’s talk about the mechanics of quantum time again, except let’s replace the treadmills with gyroscopes. Let’s call matter gyroscopes (m+) and they spin the same way in our quantum time bubble model. Let’s define antimatter as the exact same thing, with the exact same properties as our version of matter, but the gyroscopes spin the other way, so we call them (m-).

Now let’s define three new terms, because I’m sick of writing “virtual matter antimatter dual particle.”

- **Daisalt: a 4D pair of matter and antimatter particles that are quantum entangled to perfectly counter the angular momentum of the other.**
- **Daion: one 4D half of a daisalt, as in either the matter or antimatter particle.**
- **Tether: the 4D quantum entanglement combining two daions into a daisalt.**

Here’s the deal about antimatter: (and it’s not helped by science fiction, and also science that treats all quantum entanglement equally), and that is that antimatter always explodes when in contact with matter. I contend this is true if you take any old antimatter and throw it against matter, it’s like throwing two tops at each other as they flip around like crazy at the speed of light, and then everything explodes in a shower of sparks and radiation.

When a matter and antimatter particle are quantum entangled exactly, however, I theorize they are two sides of the same rubber band, and can perfectly match their angular momentum, and thus align perfectly and stop moving in 4D.

(Also this must be done at low temperatures and speeds, so like only daisalts that are close to 0k, or else it's like all those bad space movies where they try to dock a spaceship to a space station at ludicrous speeds to disastrous results. That's just a hunch though.)

So if the virtual particles are perfectly aligned in the one and only spot where they wouldn't explode, if we are saying they exist for sake of argument, then it must also be true that they don't explode.

So let's say they are stable to each other, they (typically) sit at 0k in the Firmus, and the top layer of the Firmus is perpetually boiling at 2.7k because of the 0k vacuum, which turns them on and off, just enough to be yanked apart by the event horizon of a black hole.

Part 2: The One Daisalt to Rule Them All

Since we are on the subject, let's talk about black holes next.

So if you fall into a black hole, what really happens if there's another dimension with no time attached? It's not what we would think it would be. Sci-fi and science are using time as the axis, so they say it's some sort of time stretching shenanigans, and maybe a portal to a multiverse.

Well with a warp axis, this is what would happen:

A black hole is the perpendicular extreme of pressure.

You just get crushed, condensed and cooled. That's it. There's no spaghetti. There's no grandpa you can say hi to and then contemplate his demise.

Over the distance that the black hole is wide, the entire structure of matter is squished and reassembled into perfect pure energy and extruded out the other end at about the size of a neutrino. Pure energy shoots out from the crushed and defeated black hole, and in a superfluid there is an effect called a Vortex Dipole, which makes two perfectly mirrored counter-rotating whirlpools.

Now seems to be the right time to talk about how superfluids– and therefore Aether–form as a solid: when a superfluid is subjected to a temperature difference it creates a vitreous solid, otherwise known as glass or vitrium.

Scientists already can do this. In a lab, if you cool liquid Helium down to almost Absolute Zero, it

becomes a Superfluid. It loses all friction and behaves perfectly, just like the Aether.

If you leave it at 0K, it will never freeze into a solid. It doesn't matter how cold it gets; standard freezing requires a lack of kinetic energy, but quantum jitter keeps the Helium liquid.

So how do scientists freeze superfluid Helium into a solid? They crush it. At near 0K, if you apply 25 atmospheres of extreme geometric pressure, the superfluid is forcefully compressed into a perfect crystalline solid.

So here's another term I'm defining:

Vitrium (noun): The solid, crystalline phase-state of the 4D Aether. At baseline, the Aether exists as a universal plenum at absolute zero, behaving as a frictionless Bose-Einstein Condensate. Vitrium is forged only when this macro-plenum state is interrupted by the localized geometric pressure of a singularity. This extreme pressure, combined with the thermal shock of compressed matter, forces the superfluid to undergo a quantum phase transition, flash-freezing into discrete, highly ordered Planck-length hyperspheres.

When the whirlpools shoot out of the nozzle of a black hole, deep at what science would call the singularity, they are moving, and movement means temperature.

The math says singularity, which means as it goes to an infinite point, there would be a gap all the way from the very top most layer, outside of the black hole, where the Void touches the Aether, and some of the vacuum can seep in.

The perfectly 0k Firmus resists this, and freezes the outside of the whirlpool which forms the tiniest structurally sound constructs it can possibly make, 4D hyperspheres of vitrium full of Aether whirlpools bound at the hip by a tether made of vitrium. Since they are flash frozen Instantaneously, nothing complicated or structurally unsound can be made. It's like a printing press. This is the forge of Mount Doom.

There are probably some still reading that are thinking, yes but nothing can be smaller than a planck length! That's the whole point of quantum!

Honestly I agree! You can't make anything smaller.

However, physicists struggle to understand why all particles are so dang precise. You would think they would be all sorts of sizes, but you only get a few regular ones. I think that's because you can't bend it any more. You can't bend something past its tensile strength, and solid energy, or vitrium, has one.

Think about a piece of paper, if you fold it and then fold it again and repeat, there gets to be a

point where you can't bend it any more. The same goes with a whirlpool that you can't bend when it's the level of a water molecule, and the same thing goes for vitreous energy.

That maximum tension of solid energy—the absolute breaking point of reality's rubber band—is **exactly the speed of light squared. (c^2)**

(The math is in the appendix, since this will be hotly debated.)

A black hole is the ideal 4D location to print out something that can be no smaller than a planck length due to the maximum tension of the vitrium, and no larger than a planck length due to the singularity level of pressure.

So if all the conditions are always the same, and you are always using the same material when made at its structural extreme, then of course there would be no variance.

Part 3: Jilted Buoys Across a Sunless Sea

Or would there be? Is any system absolutely perfect?

Say you had a perfect hypersphere, it would be absolutely the same diameter all the way around, one planck length.

What if the very act of the Aether and the Void touching, and making a third thing created a tiny three body problem, and injected a tiny bit of chaos into this process? What if, very rarely, there was the tiniest variance?

So then the hypersphere could be a little bit **longer** than a planck length.

Why does this matter?

If it was even a little bit off, then when the whirlpools inside are spinning, they could wobble, and therefore the daisalts can get out of whack and drift apart from each other. Once that happens, and they get separated by any current in the Firmus, you'd have one going off in one direction, and the other going off in the other direction, tied together by an (nearly) indestructible vitrium tether.

On a seemingly tangent note that will become clear in time, we have an abundance (more like a very tiny amount) of matter in our universe, and zero antimatter. This is called the Baryon Asymmetry Problem. This just means, hey, where is all the (tiny amount of) antimatter?

Also, thus far I've been treating the 4D Firmus region like it goes forever underneath our 3D dimension, and what if it doesn't? What if it has a thickness on the warp axis? What if the rubber

sheet really is a Rubber Mattress? What the heck would that look like?

It would look just like the inside surface of the big bang balloon, where everything big looks the same but mirrored, but the small stuff looks random.

Back to the defective daisalt: say each daion that comprises it floated to their respective sides, then each daion would be trapped on the other side by a sea of indestructible incompressible timeless material, and the two particles would still be joined at the hip by an indestructible tether of quantum entanglement, stretched to absurd lengths, but still strong enough to lash them both together, each facing outwards to an uncaring 0k vacuum.

So if you did this for billions of years, you might get something like 99.9999999% inert perfect daisalts supersuspended in a hypersea of Aether with .0000001% matter daions on one side of the Firmus, and .0000001% antimatter daions on the other side of the Firmus. Each of the imperfect daions on either side would be bound to its partner by the strongest thread in existence, bending the 4D floor beneath us.

Boss Fight: Quantum Entanglement

Seriously? Would a tiny tether made of this stuff stretch that long? That couldn't be a real thing.

Quantum entanglement is a real thing! Ask a scientist!

They have shown it in our 3D space when they take two particles together at close to 0k and force them together so their “fields” overlap.

In this model I would say that they were cold welding two daions together to make a tether between the two, then stretching the tether out.

In the lab these quantum entangled particles can then affect each other across any distance. ANY.

However, they are notoriously unstable. Why would they be if they are supposedly so strong?

Because the tether is only strong along its length, like rope. The tensile strength of you pull it is c^2 , which is the strongest thing in our universe.

However, just like a rope, if you cut it sideways, it will break easily.

Also, if you entangle two things together that are already entangled, you create a chaotic mess of gyroscopes.

Back to the above real world example:

If you took any two random daions that are already entangled to their antimatter twins on the antimatter side, you would create a gyroscopic instability, combined with an invisible trip wire between the two particles.

Lastly, I'm talking about not one of these quantum entangled particles pulling down, I'm talking about ALL of them. That's a lot of thread. And thread makes rope, and rope makes stronger rope, that can drag an anchor that can counter a ship.

So gravity is the strongest rope in existence pulling across the Firmus while being surrounded on two sides by the Void.

Part 4: Gravity is Two Things All Along

Wait a second, would super string be enough to bend the floor on its own as measured?

Nope.

It would definitely be important, especially in large quantities, but what would be the second half of gravity?

When I was in college I worked in the science basement as an undergrad, and we had this device called a Chemical Vapor Deposition (CVD) chamber. What it did was suck out all of the air in the chamber and what would be left is all of the gas slammed against the wall of the chamber, held in place by the pressure of the vacuum.

There was one more important piece of the Void region that I should probably mention now:

Since it's a vacuum, it would have the most pressure possible towards a gas.

The setup for this very thought experiment is a 4D vacuum next to a 4D object. The surface of the 3D object is us.

The gas is the Daions.

So the million-dollar mechanic's question: Does the math of a 4D pressure pushing on a volume actually map to standard Gravity?

Yes. It maps flawlessly. In fact, it maps so perfectly that we just independently arrived at one of the most bleeding-edge, revolutionary concepts in modern theoretical physics: Emergent Gravity (Thermodynamic Gravity).

Here is exactly how standard science maps vacuum pressure directly into the exact math of gravity:

1. The Dutch Mechanic (Erik Verlinde)

In standard physics, Gravity is the odd man out. It doesn't fit with the other quantum forces. But in 2010, a physicist named Erik Verlinde proposed something radical that perfectly matches a CVD chamber.

Verlinde mathematically proved that Gravity is not a fundamental force. Instead, he proved that gravity is just an emergent thermodynamic pressure pushing against a dimensional boundary (he calls it a holographic screen; we are calling it the Firmus).

Verlinde used the thermodynamics of pressure and entropy on a boundary, and when he solved the equation, the math spit out exactly:

$$F = G m_1 m_2 / r^2$$

That is Newton's exact law of gravity. If you have a massive vacuum pressure pushing against a dimensional wall, the mathematical byproduct is gravity.

2. How Pressure Becomes the Inverse Square Law

How does an even, flat vacuum pressure pushing down turn into the $1/r^2$ curve of a gravity well?

Through the mattress.

When the 4D vacuum (P) pushes down on a 3D volume of daions (V), and that volume is forced down into the 4D object, it stretches.

Think about the physical geometry of stretching a drumhead. If you push a bowling ball into a trampoline, the fabric stretches deepest in the center, and the stretch gradually spreads outward, getting wider and shallower the further away you get.

The mathematical slope of a stretched membrane dispersing pressure outward geometrically follows the exact inverse-square law ($1/r^2$).

The heavy mass is pushed into the mattress.

The mattress stretches.

The slope of the mattress is the gravitational field.

When a second marble rolls onto that stretched slope, it is naturally funneled toward the heavy mass.

It looks like the two masses are "pulling" each other, but they aren't. They are just rolling down the dents they pushed into the surface.

In this model, Gravity does not just push down. Gravity pushes and pulls down. Matter does not "attract" matter on our side. Matter is pushed and pulled and to its antimatter partner on the other side. Gravity is the pressure of the Void pushing the Daions combined with the tension of quantum entangled matter and antimatter particles pulling through a region that cannot break, only bend.

3. The Archimedes Counter

When physicists counter what the vacuum of space should be pushing on everything, they get an astronomical number:

10^{113} Joules of vacuum pressure

They think it's a mathematical misprint.

What if it's not?

But how could it be real?

If the 10^{113} Joules of vacuum pressure is constantly shoving the marbles down into the mattress, why don't they just punch a hole completely through the Firmus and fall out the bottom?

Because of Archimedes' Buoyancy.

Just like water fighting back against the hull of a ship, the Firmus has a massive structural tension. It wants to snap back to perfectly flat.

The Plunge: The 4D vacuum pushes the mass down into the fluid.

The Resistance: The Firmus stretches and pushes back up with a force exactly equal to the displaced volume of the dent.

When those two forces—the crushing pressure of the vacuum and the Archimedes structural tension of the mattress—perfectly equal zero, the daion parks. It sits suspended in the dent. It has achieved hydrostatic equilibrium.

4. The Antimatter Reflection

And because the CVD chamber wall is a matter/antimatter region, the exact same thing is happening on the other side.

While our Matter is being pressed down into our side of the Firmus the Antimatter is being pressed up into the other side of the Firmus by the opposing vacuum. They both create dents. They both achieve Archimedes equilibrium.

We are separated only by the thickness of the 4D Firmus. The black hole bubble generators forge the Daions, the bicausal spin sorts them, and the overarching vacuum pressure pins them to the 3D surfaces on either side.

We are just one side of a symmetrical Firmus.

Boss Fight: The Matter/Antimatter Sorting Hat

Let's solve **Baryon Asymmetry** now:

Standard physics calls this the "Antimatter Problem." They know the Big Bang (or a black hole forge) should create exactly 50% matter and 50% antimatter, but when they look at our universe, the antimatter is completely gone. To explain it, they invented "CP Violation"—basically arguing that the universe just inexplicably "prefers" matter.

Let's instead install a mechanical fluid filter.

1. The Galactic Vortex (The Macro Current)

We already established that the Firmus is filled with Aether (a OK superfluid). When a massive structure like a galaxy spins, it doesn't just spin the stars; the massive gravitational drag of the black hole whips the underlying 4D Firmus into a colossal, spiraling current. We have a massive, localized fluid vortex spinning in a very specific, dominant direction.

2. The Threads (Chirality)

In physics, the spin of a particle is called its **Chirality** (literally "handedness").

- Matter (our Daions) spins one way. Let's call it Right-Handed.
- Antimatter (their Daions) spins the exact opposite way. Let's call it Left-Handed.

Because imperfect Daions are wobbly hyperspheres spinning, their physical exteriors act exactly like the threads on a screw.

3. The Sorting Hat (The Archimedes Lift)

Imagine dropping a loose right-handed screw and a loose left-handed screw into a massive,

clockwise-spinning whirlpool of water.

The current hits the threads of both screws.

- Because of the angle of its threads, the Right-Handed screw catches the current and is mechanically driven **upward** by the fluid pressure. It rides the elevator straight up to the 3D surface (Our Universe).
- Because its threads are reversed, the Left-Handed screw catches the exact same current but is mechanically driven **downward**. It gets drilled straight down through the Firmus elevator shafts into the basement (The Antimatter side).

We don't need "CP Violation" to explain why our universe is only made of matter.

The black hole forge at the center of the galaxy *did* create 50% matter and 50% antimatter. But the massive, swirling current of the galaxy acted as an Archimedes Sorting Hat. It physically centrifuged the two opposite spins in opposite vertical directions along the W-axis.

Our 3D crust isn't "missing" its antimatter. The antimatter is exactly where the fluid dynamics forced it to go: pushed down into the basement to serve as the perfectly balanced counter-weight for the quantum tethers.

The universe prefers symmetry, even if we are only one side of that stretched out equation.

Part 5: Why The Universe Is So Confusing

When we look out at our universe, we think it's just one thing, because honestly, why would it be two things?

Well for starters, in order to have a "change" you need to have at least two things. In order for something to alter its basic course, you must have something to interact with it, which implies there must be two things to be able to vary, and since we live in a varied universe, then the most simplest solution for the universe is to have exactly two things.

In this case, a vacuum and a plenum.

Okay so the vacuum isn't that confusing, but why is the Firmus so confusing? Why does it act like a solid in some ways, but act like a liquid in others?

For the same reason above, it's actually two things:

Just like the ocean in our 3D world is made out of water and salt, and if you increased the amount of salt you would eventually get quicksand, the 4D Firmus is made out of Aether and Daisalt, and the Daisalt has saturated the Firmus to the point of a hypercolloid.

1. The Daisalts (The Bricks)

Temperature: 0 Kelvin.

Physical Identity: YES. They are distinct, rigid, 1-Planck-length spheres connected by a tether. (Think peanut or dumbbells) They provide the physical geometry of the 4D Plenum.

Quantum Identity: NO. Because they are at 0K, they have zero vibration. No vibration means no ticking clock, no causal time, and no friction.

The Result: Because they are distinct physical shapes but lack quantum friction, they perfectly form the currents. They slide past each other as a physically structured, yet perfectly frictionless superfluid.

2. The Aether (The Mortar)

Temperature: 0 Kelvin.

Physical Identity: NO. It has no edges, no boundaries, and no shape.

Quantum Identity: NO INDIVIDUALS. It is all one single quantum identity for the entire Firmus. It is a pure, non-local continuum.

The Result: Because it has no physical shape to hold tension, it cannot support gravity or bounce light. Instead, it acts as the ultimate, gap-filling thermodynamic heat sink. It is the formless sponge that absorbs vibration.

The Ultimate Symbiosis:

This dual-architecture solves the biggest headache in material physics: How can space be stiff enough to bend light, but invisible enough to absorb heat?

The Daisalts provide the physical geometry, the c^2 tension, and the fluid currents.

The Aether fills the infinitesimal gaps between those spherical bricks, acting as the single, non-local unified sponge that quietly drinks the structural friction of the universe.

By mixing them together, we have a four dimensional substance that can transmit waves to link us together, bend under the weight of a supermassive black hole, yet still be frictionless enough to feel like we are ice skating when we wave our hand in front of our face.

Boss Fight: The Inverse Square Law Is Ironically A Sphere

Since I'm claiming that gravity is a physical depression in a solid-state 4D hyper-colloid, physicists will immediately demand that this mechanical model naturally produces the $1/r^2$ drop-off rate.

Here is how a Dual-State Vacuum/Plenum physically generates the Inverse Square Law:

1. The Flaw of the Rubber Sheet

Every physics teacher explains gravity by throwing a bowling ball onto a 2D rubber trampoline. The trampoline bows downward, and marbles roll toward it.

But mathematicians hate this analogy. Why? Because the surface of a trampoline is 2D. If you push down on a 2D sheet, the structural tension spreads out in a flat circle. The circumference of a circle is $2\pi r$. That means on a trampoline, the pull of gravity would only drop off at a rate of $1/r$.

Newton's law requires $1/r^2$. The 2D rubber sheet fails the math test.

2. The 3D Surface (The Bubble Zone)

Now look at the Firmus.

We established that the hyper-colloid is a 4D volume (the Plenum), and our space (the Bubble Zone) is the 3D surface sitting on top of it.

When the Void pushes a Daion down into the W-axis, the Firmus doesn't want to yield. It has c^2 structural tension. The Firmus has to distribute that displacement stress outward across the surrounding daisalts.

But those surrounding floorboards aren't a flat 2D sheet. They are our 3D space (X, Y, Z).

3. The Perfect Geometry ($1/r^2$)

Because the displacement stress has to radiate outward horizontally through a 3D space, it spreads out as an expanding sphere.

What is the surface area of a sphere?

$$\text{Area} = 4\pi r^2$$

As the physical stress of the Daion's gravity divot ripples outward through the Firmus lattice,

the tension is diluted across the surface area of that expanding sphere. Because the surface area grows by the square of the radius (r^2), the physical slope of the displacement—the literal "pull" of the divot—weakens by the exact same amount.

You double the distance from the star ($2r$).

The sphere of stress is now four times as large ($2^2 = 4$).

The mechanical tension of the Firmus divot is exactly one-fourth as strong ($1/4$).

We don't have to invent a gravitational field that fades into the void. The $1/r^2$ law is literally just the geometric formula for how physical stress dilutes as it expands spherically through the 3D boundary layer of a 4D hyper-colloid.

Standard physics teaches the 2D rubber sheet, which yields the wrong math ($1/r$).

This model uses a 3D solid-state surface displacing into a 4th dimension, which perfectly yields Newton's $1/r^2$.

This model is the only way space can have a physical architecture. This is geometrically mandatory.

Part 6: Marvel vs. DC Ultimate Showdown

So I'm saying that gravity could be the pressure of the vacuum combined with a bunch of quantum entangled particles warping the quicksand mattress? Yup! It's just like if you attached a rubber band to either side of a mattress. One wouldn't do diddly squat, but if you had a whole bunch, you would squish the mattress.

So let's see how this plays out: Let's skip past all the intermediary planets and stars and talk about the biggest versus the toughest: black holes versus the Firmus.

Why can't the Firmus region break? Because it is timeless. It has temporal armor. If you could

somehow aim a 4D gun on the w-axis and aim it at the Firmus region any bullet shot would quickly have all of the heat sucked out of it because $0k$ and all momentum and force cease because it is timeless. I have this image of a Twilight Zone episode where a guy can stop time and he stops it right before a nuke drops. It's just like that, but the Firmus doesn't have to keep on living, because it is always frozen in time.

Also it's super dense. Like really really dense.

It's dense to the point that the daisalts are touching, but they don't cold weld together because they are turned off at $0k$.

Nothing can bypass the daisalts because they are physical things (except the tethers, which slip between the frictionless daisalts), and nothing can heat the Aether (no matter, I should say). The Firmus is the ultimate non-Newtonian concrete: Inert daisalts are like the 1x2 rebar of the Firmus, and the Aether is the cement.

All matter (and antimatter) can do is group up and heat the glass, bit by bit, until planets become suns, and suns become black holes, and black holes are monstrous whirlpools, one on each side, one full of matter stretching and warping, one of antimatter stretching and warping.

I mean if not a region full of indestructible energy and frozen hyperspheres shunted off into a place we can't see, what else could possibly stop a black hole the size of 100 billion suns? Tissue paper? Space magic nothingness? The only thing that the literal rules says that you can't destroy is energy. So what makes more sense, nothing, or indestructible energy?

I get it, we were raised knowing that energy wasn't a thing, it was a, well, abstract concept? It just kind of was there, and you couldn't talk about it really because it was taboo to talk about space magic. So here's the deal: Einstein came with his crazy hair and said that $E=mc^2$, and everybody was like, okay, magic dust can turn into an object and back. However, what if that equation really says that energy can change its shape, just like any other form of matter? Is it time to get rid of time, and demystify energy?

Where were we? Okay, vacuum pressure gravity plus countless webs made of 4D superfluid leashing and melting an impenetrable fortress made of the same stuff, but protected by temporal armor and density. That's totally Graviton and Spiderman (Venom infected of course) vs. Superman! Who wins?

Unfortunately for Marvel fans (and fortunate for all of us really, because the alternative would most likely lead to universal catastrophic failure, meaning Big Bang), the Man of Steel wins.

The vacuum pressure and quantum tethers push and pull the matter and antimatter into their respective black holes, all the fire and fury reverses, the gasoline goes back into the can, and what pops out the other end is a bunch of tiny cold mirrored twin 4D marble gyroscopes with

the swirls in them, surrounded and tethered by superconducting and frictionless glass.

Thus the circle is complete, all of the mismatched daions fall down the garbage chute and get recycled back into the Firmus.

An ecosystem is formed.

Boss Fight: Actually Gravity Is Three Things

Standard physics trains us to think there's a magical tractor beam pulling things together.

And there is!

But instead of two, we got rid of gravity as a separate force from quantum entanglement.

This model explores how they would be the exact same thing, and adds material science to the mix to shift this magical beam into a mechanical object.

1. The Increasing Slope

Think about the geometry of the tethers. No matter where a daion is, its bungee cord always pulls in one specific direction: straight down the W-axis toward the antimatter basement.

On a flat floorboard in deep space the tether pulls straight down perpendicularly. The particle just sits there, pinned to the mattress.

However, in a gravity well the floorboards are angled, but the tether is still pulling straight down and forces a particle to roll down the slanted slope of the Firmus.

2. The Tower Of Marbles Going Down the Chute

As more and more matter slides down that funnel, they all stack up on a steeper and steeper cliff face, still pinned to the slope by the pressure of the vacuum. We now have trillions of tethers anchored in the exact same microscopic footprint of the Firmus.

This creates a snowball effect pulling the daions and the slope so deep that the walls of the funnel become incredibly steep.

Once the walls go steep, it isn't a gentle hill anymore. It's like a literal Chute from Chutes and Ladders.

3. The Nuclear Fusion Crush

This is where the crushing happens.

If you have a massive, steep chute, every single proton that falls into it is being pulled straight down by its own tether. But there is a bottleneck. The bottom of the chute isn't wide enough for all of them.

The particles are desperately trying to follow their tethers straight down the elevator shaft, but they keep violently slamming into the particles already stuck at the bottom.

The matter at the bottom of the chute is caught in a macroscopic vice grip. Trillions of individual bungee cords are actively trying to pull through the exact same spot, forcefully mashing the Daion shells against each other.

When that mechanical crushing pressure gets high enough, the shells violently fuse.

That is nuclear fusion. We just ignited a star.

Gravity is these three things:

- The Void keeps pushing from the top and the side
- The Slope is angling more and more perpendicular
- The Tethers are pulling down

4. Solving the Hierarchy Problem

I would like to point out that tethers would be less like taut steel cables and more like bicausal elastic bands.

The Ultimate Tensile Strength of a tether would be c^2 , but the Operating Tension would be much lower, somewhere in between the daisalts that would be at total rest, and the maximum breaking point of c^2 .

This inadvertently solves why Gravity is so unbelievably weak at the quantum level (literally 10^{40} times weaker than the electromagnetic force), but somehow becomes the dominant force of the entire universe at the macro level.

When just the Void vacuum is pushing down on one daion in the middle of deep space where the slope of the Firmus is flat, and there is minimal tension from one rubber band, then Gravity is minimal.

However at the event horizon of a black hole, with not only the pressure of the vacuum, plus the slope of the Firmus going to perpendicular, plus the tethers exponentially pulling down the slope, then Gravity would be the combination of three things working as one.

Double Boss Fight: Why A Singularity Can Have A Nozzle, and Why The Firmus Has Currents

You would think that the very very very tippy top of the inverted 4D summit of a black hole would be an absolute point, meaning, how could anything be extruded if it goes to infinity?

It doesn't go to infinity.

The calculus math says it's a limit, and a limit means as it goes to infinity. But in reality, it can't get there because the floor is quantized by daisalts.

Let's think about oranges for a second. Think about a pile of them at your neighborhood supermarket. No matter how you stack them, there's always a gap.

The same goes for hyperspheres.

(Math in the Appendix.)

Once a daion is crushed by the tower of matter, the Aether can flow one way through the cracks and form new daisalts.

Also, a daisalt isn't a single hypersphere. If it was, the Firmus would have no current since there would be no extra space between the objects, and everything would be locked in a perfect lattice of oranges.

Instead, there is extra room because we are talking about peanuts, and peanuts have variable porosity, which just means there are varying gaps for things to shift and move around, which is why you can have a perfect fluid of daisalts that can still have loose daions flowing to the surface.

Part 7: Firmus Speculation

A natural question, and one that I don't have a definitive answer to, is: how wide is it along the warp axis? As in, how far away is the Antimatter side of the Firmus.

To be honest, your guess is as good as mine.

Luckily we don't need to know the exact mathematical thickness down to the millimeter right now. However I can deduce a mechanical floor and a mechanical ceiling, which is exactly how theoretical physics narrows down the blueprint. Let's look at the rough minimum and maximum bounds:

1. The Minimum Depth (Twice the Galaxy Width)

My intuition tells me to scale the minimum thickness to twice the size of a galaxy, which aligns with the mechanics of a black hole.

Think about what a galaxy actually is in this engine: it is a colossal, swirling topographic sinkhole in the 3D surface, anchored by a supermassive black hole at the center.

If the Firmus was thin—say, only the thickness of a solar system—the gravity dent from a supermassive black hole would instantly punch right through the bottom of the glass. The matter surface would violently collide with the antimatter B-Side, and the entire galaxy would annihilate in a flash of pure energy.

To prevent a puncture, the 4D hypercolloid has to be thick enough to fully absorb the deepest, heaviest gravitational dents the 3D universe can possibly produce. A thickness of at least twice the width of a galaxy gives the Firmus the necessary shock-absorption depth. It allows the Void to push and the tethers to pull with massive force without the two opposing surfaces ever actually touching.

2. The Maximum Depth (The c^2 Snap Line)

In this model, c isn't just the speed of light; it is the absolute maximum speed that kinetic energy can transfer across Vitrium. Therefore, c^2 represents the absolute maximum kinetic tension the hardware can withstand before it physically shatters.

If the Firmus is too thick, the bicausal tethers (the 1D fishing lines running down the W-axis) become too long. The longer the tether, the more tension it is subjected to when the 3D surface moves. If the depth exceeds the structural limits of the Vitrium, the sheer mechanical stress of a moving galaxy would cause the tethers to exceed c^2 tension. They would instantly snap. The matter on the surface would lose its dark matter anchor and just fly apart into the Void.

3. The Antimatter Insulator

This explains why the antimatter B-Side is completely isolated from us.

That massive, galaxy-spanning thickness of the Firmus acts as the ultimate cosmic insulator. The top surface (us) and the bottom surface (antimatter) are locked in a permanent, heavy tug-of-war via the tethers, but because the glass is so impossibly thick, the two sides can never reach each other to cancel each other out.

We just boxed the thickness of the universe into a perfectly logical Goldilocks zone:

Too thin: The black holes punch through and annihilate both sides.

Too thick: The tethers exceed c^2 tension, snap, and the galaxies dissolve.

The exact number of lightyears doesn't matter for this draft. What matters is that the mechanical boundaries are mathematically justified. I leave the exact dimensions for others to explore.

Epic Boss Fight: I See You're Using Navier-Stokes, Luckily I've Got An Euler

Now we are about to take the most notoriously difficult mathematical problem in all of physics:

If we tell a physicist that the Firmus flows like a fluid underneath a Black Hole, their immediate reflex will be to try and trap us with the Navier-Stokes Equations. These are the equations that govern how liquids and gases flow. They are so impossibly complex and chaotic that the Clay Mathematics Institute has offered a literal \$1,000,000 prize to anyone who can fully solve them.

Let's try to win a million dollars!

1. The Nightmare of Viscosity

Why is Navier-Stokes so hard to solve? Because of one variable: Viscosity (Friction).

When you look at a rushing river, it is chaotic. Trillions of water molecules, all with their own unique quantum identities and kinetic energies, are constantly grinding against each other. This friction creates unpredictable turbulence, swirling eddies, and chaotic froth. Navier-Stokes tries to calculate the math of all that microscopic grinding.

The math would be a chaotic, unsolvable nightmare if the Firmus currents were made of normal matter.

Luckily they aren't.

To describe the Firmus we just need the Euler Equations.

2. How Euler Already Solved The Firmus

What are the Euler Equations?

In fluid dynamics, the Euler equations are a set of formulas used to calculate the flow of an inviscid fluid—a fluid with absolutely zero viscosity (internal friction). Leonhard Euler wrote these equations in 1757, long before Navier-Stokes existed. He wanted to understand the pure conservation of mass and momentum in a perfect system before the messy reality of friction ruined everything.

In standard physics, the Euler equations are considered a "mathematical ideal." Physicists use them as an approximation because, in the 3D Bubble Zone, every fluid has at least a tiny bit of friction. A perfectly inviscid fluid is incredibly rare (only achievable in lab-created superfluids near 0 Kelvin).

Standard physics thinks the Euler equations are just a useful approximation for our world.

We are declaring that the Euler equations are the literal, exact laws of the 4th-dimensional Firmus.

Because the Daisalts and Aether are locked at 0 Kelvin and possess Temporal Armor, their viscosity is exactly zero. When the supermassive black hole punctures the Firmus at the singularity and forces the hyper-colloid to flow, it must flow according to Euler.

Here is how Euler's rules perfectly inform the 4D deep sea currents:

A. Pure Pressure, No Chaos (The Momentum Rule) The Euler momentum equation states that if a fluid has no friction, its movement is dictated by one thing and one thing only: Pressure Gradients.

In the Firmus, there is no chaotic swirling, no turbulent eddies, and no unpredictable heat pockets. The Daisalts flow strictly away from the immense downward pressure of the Black Hole, and glide perfectly smoothly toward areas of lower pressure until the c^2 structural tension can safely lock them back into the perfect configuration.

B. Perfect Energy Conservation (The Entropy Killer):

In Navier-Stokes, fluid flow loses kinetic energy because friction bleeds it off as heat (Entropy).

Euler equations have no friction variable, meaning they mathematically mandate 100% perfect energy conservation.

This is exactly what we need for our closed-loop thermodynamic engine!

C. The Timeless Conveyor Belt (The Bicausal Flow)

Because Euler equations deal with inviscid flow, the particles (the Daisalts) slide past one another without any causal drag. They keep their physical forms (they are still distinct Daisalts),

but because they have Temporal Armor, they do not "know" they are sliding past each other. The shift is purely geometric.

3. The Ultimate Fluid Dynamics Combo

If a physicist challenges us on the fluid mechanics of the Firmus, this is the exact mathematical sequence we hit them with:

The State: The Black Hole drops the matter to 0 Kelvin, stopping the gyroscope.

The Armor: Zero vibration means zero ticking clock. The Daisalts gain Temporal Armor.

The Physics: Temporal Armor prevents time-based friction (viscosity drops to zero).

The Math: Zero viscosity means the fluid strictly obeys the inviscid Euler Equations.

Navier-Stokes, consider yourself perfectly dodged.

Chapter Four: Seismology

Part 1: Take All of This With a Grain of Daisalt

So this is when you say, hey, you started with quantum bubbles, and now you switched to actual objects. That's so true.

I'm hypothesizing what the RC car looks like under the smoke.

As in, what 4D object would give us these 3D quantum probabilities. Just because we can't measure the thing doesn't mean we can't think about what the thing would be.

I understand the reluctance to infer what a 4D object would look like, and I would counter, isn't that what we've been doing this whole time collectively anyway? I mean, isn't our belief in a time axis just another way of saying that the past is a thing, and the future is a thing? Then

Einstein came along and he started talking about spacetime as a thing, and it makes sense that the fourth dimension is an actual thing, so then the question is, wouldn't those things have shapes that stretch into our 3D space? Why would they be shunted off into a past or future that we have no access to, however gravity, which has such a profound impact on our lives does?

What if the fourth dimension maps completely on to our existence, and in a way that makes more sense than bending the axis to get it to make sense?

If we can map a thing with more detail, then it will have more detail. That's pretty self evident. A quantum bubble exists with space-time because we don't have another way of describing its behavior. With Space-Warp however, we might have a better understanding of the shape of the thing, and therefore have a better picture of the thing. No one denies that an electron is a thing, and we know how it's doing what it's doing, maybe there's a way to know why it's doing what it's doing, and maybe quantum time is the why.

So here's my thought, and let's see where it goes:

- A daisalt would be a theoretical four dimensional object that would look a little bit like two marbles attached by a string. Inside each of the marbles would be a whirlpool of Aether and vacuum, which would spin four dimensionally (six degrees of axis on planes for geometry nerds).
- They would look like a tiny four dimensional dumbbell.
- The whirlpool would spin like a gyroscope due to an inherent pressure differential.
- Daisalts would be the smallest thing possible in our universe because nothing can be built smaller than it due to the structural tension of the vitrium casing, which is a 4D hypersphere a planck length in all dimensions.
- Two daions together to make one daisalt by a **tether**, which is quantum entanglement forged primordially.
- The marbles could only be destroyed head on by something that could be the speed of light squared.
- That's the same for the pulling tension strength of the tether, which is gravity.
- The tether would be vulnerable to a shear force. (Think like a rope is stronger when you pull it than when you cut it with scissors.)
- If the daisalt increases in temperature, the pressure differential in the whirlpool starts to spin, and since it's a gyroscope, it moves around, but the vitrium casing does not spin.
- If both daions of the daisalt are perfect (as in both are perfect hyperspheres), then the daisalt would spin perfectly and counter the angular momentum of the other and remain stable.
- If split apart, you would get a mirror matter antimatter pair, which would be an electron and a positron, because both sides are perfect.
- If the daion is imperfect, which would be really really really rare in an almost perfect system, then you get a wobbly hypersphere. And wobbly hyperspheres are where the

fun starts.

Part 2: The Ballerinas and Pirates with Peg Legs

Next let's look at daions (one half of a daisalt) and visualize what they would look like to us:

(For purposes of this part of the thought experiment, if you know the masses of the particles in question, please let's assume it doesn't matter yet, and I'll get to why afterwards. Also of course this is all in 3D, when really it would be 4D, except of course for the points, which are 0d.)

Let's introduce the dancers:

First off we have the one legged peg legged ballerina, who can stand on its one tippy toe perfectly.

From the perspective of the floor the ballerina would look like a point. The ballerina can zip all over the dance floor, but is not loyal at all. It will freely dance with whomever it pleases, and lives to dance. However, the only thing a ballerina loves more than dancing is booty.

This would be a down daion.

Second we have the one legged peg legged pirate, and pirates as we all know wear giant booty boots on their pegs, so they clomp around the dance floor and drag their feet. From the perspective of the floor, a pirates boot would also look like a point because they are trying so hard to pirouette, but they just can't manage it.

A pirate is also constantly trying to lean on anything or anyone around, because they are so tipsy with their giant booty! Yargh!

This would be an up daion.

Now let's pause here and note that we have met the dancers. They are the true particles. They are the RC cars, the marbles in the rubber sheet, however you want to envision them skating on the floor in your mind.

To recap:

The Binary Daions (1 and 0):

In this thought experiment are 4D daions, and they can only exist in one of two physical states when they erupt into our 3D space:

The 0 (The Down Daion): This is the Perfect Shape. It is geometrically balanced, structurally sound, and sits flush against the Firmus floorboards. It is the ballerina on one perfect peg. It creates minimal drag, and in our 3D space looks like a point.

The 1 (The Up Daion): This is the Defective Shape. It is the pirate wobbler. It was extruded with a slight geometric imbalance at the peg. Because it is defective, it creates massive drag on the dance floor. It is desperate to either find partners to braid with (to hide its wobble) or snap off its defective vibration to become a perfect Down Daion.

Boss Fight: Heisenberg's Uncertainty Principle

If a daion is sliding along, wouldn't we see their movement as smooth? Particles are notoriously bumpy, and jump all over the place.

In quantum mechanics, there is a literal term for the rapid, jagged trembling motion of fundamental particles: Zitterbewegung (German for "trembling motion.")

However, this assumes a flat rubber sheet, and in this thought experiment, the sheet is made out of uniform hyperspheres, therefore, the road is made out of cobblestone! No matter what you drive on a bumpy road, it's going to be inherently unpredictable. No magic needed, only the image of a gyroscope bouncing along a road made of rocks.

Also, we might think that a particle would be held still in a 3D vacuum we create, but the sun is spinning around the Milky Way at 500,000mph an hour, and the earth around the sun at 67,000mph, so how confident are we with our Bubble Bias?

Also if we think back to the idea that universe can't run a three body problem in four dimensions, Heisenberg's Uncertainty Principle is a description not of magic fields, but of our fundamental inability to see the lines being drawn on a bumpy road.

Boss Fight: Mass of Particles

Science likes to treat all particles as having a uniform mass. When we are in school they teach us that mass is different than weight, because if you are at sea level you weigh less and if you are on a mountaintop you weigh more.

Mass, they say, is a universal constant for a thing.

The dirty secret is that it isn't.

In Special Relativity, there is a concept called Relativistic Mass. Standard physics dictates that an object has a "Rest Mass" (m_0)—how much it weighs when it is sitting perfectly still on the floor. But the second that object starts moving, its mass physically increases. The faster it goes, the heavier it gets. The equation for this uses the Lorentz factor (γ).

As an object accelerates toward the speed of light (c), its relativistic mass curves upward exponentially.

At 10% the speed of light: The mass increases by roughly 0.5%.

At 90% the speed of light: The mass more than doubles.

At 99.9% the speed of light: The mass becomes astronomically huge.

So what is temperature? Temperature is stuff zipping around in a localized area, and relativity doesn't care if you are traveling light years across space, or across a speck, it only cares about your speed. A race car on a track and a race car in the countryside can go the same distance, just in different directions.

So the question is that if mass is already relative, why are we saying a proton is X mass when that only matters when you see it at Y temperature? Doesn't this sound like the same thing as weight?

In classical physics the problem is that it assumes that all of the mass of a 4D object is contained within our 3D space. If you had an object that was in four dimensions, you would only feel the drag of the part of the object that passes through our 3D space. That's why they measure an electron as only a point with no mass, because the only part of the actual object dragging through our space is the point, not the whole 4D object. That's like saying a 4D airplane weighs whatever its shadow weighs in 3D, which would be zero.

To have a true representation of a 4D object as it interacts with 3D space, we would have to turn mass into Drag and Total Movement. Mass would just be the weight we can measure once we understand whether we are at sea level or the mountaintop.

In this model, that means stable things would have less mass, and unstable things would have more mass.

We actually see that already with a proton: in classical physics, a proton has less "mass" than the sum of its constituent parts.

When a ballerina is locked inside the nucleus holding hands with pirates, scientists measure its drag and call it a 'Down Quark'. But when that exact same Ballerina shape is floating on the outside of the atom acting as a kickstand, they measure it differently and call it an 'Electron'.

In this model, a muon is an up quark (or vice versa, whichever word you like better), but because we only see a muon when it is outside of a nucleus, it drags more across the floorboards, and moves more trying to keep its balance, then it weighs more. Also outside of a nucleus, kareeming across the floorboards, the tether pulling through the Firmus, a bit of the wobbly leg snaps off, and the gyroscope straightens itself, as it “decays into” an electron.

And a neutrino! I'm getting to that!

Part 3: How the Freak is Newton Still Right, Let's Define the Meaning of Light

For all its skeptical ways, science loves to measure sparkle beams through an empty magic vacuum. The question being, how would light travel in this model?

Well, for starters, if we accept that 99.9999999% of the universe is full of dasalts which are little dipole bubbles, and we are skating on its surface, then what happens if we smack one on the side really hard?

Well since they are all lined up like a tiny Newton's cradle, and if we are talking about smacking it hard enough to create light, then since it is frictionless both its minimum and maximum speed would be the speed of light.

Also the maximum intensity that you could smack it would be the speed of light because you can't move faster than that, and also the vitrium would break, so the maximum speed is c times the intensity of c for c^2 .

However, since the daisalts are in the Firmus floor, then the wave would be an earthquake.

Also, because the wave travelled four dimensionally along the line of daisalts, there was no heat generated, and no matter-time-treadmill was turned on, so no time passed for the wave.

Okay got it, but what happens when the wave hits the final daisalt, and the energy is transferred to whatever, your eye, the cat, the surface of the moon?

Well what happens to the regular Newton's cradle sitting on your desk? The last ball swings out with its kinetic energy. If you look directly down the barrel of the newtons cradle at the very end, it looks like only one ball. The last one.

So smack the top ball, and the energy travels down the line of balls until you get to the last ball that is immediately next to whatever the matter is, and the kinetic energy transfers from the last daion to the matter, and it looks like it got smacked by a particle.

Also, since the daisalts are only one planck length wide sitting still right next to each other at 0k, then they are so much more dense than any matter you happen to brush against them. That means you could never hit only one, since it would be like a snowplow running into a floor full of Newton's cradles.

With a Newton's cradle, the first and last parts of the motion look like particles, however the energy traveled as a wave the whole time.

Hence, wave/particle duality solved.

Boss Fight: The Double Slit Experiment

Okay so let's take this slow for a second, because the double slit experiment is one of the most confusing things in existence, but here's the gist: if you shoot light at a slit it makes wave patterns, so they think it's a wave, but if they shoot one, they think it's a particle, but if they stick something in the way, they think it's still a particle, which makes everybody go yay, light is a wave and particle!

That's because they think you are throwing a baseball in an empty room.

Here's the actual thing, given that daisalts are always there. Regardless of how much light waves you send, it's always a wave in the floor of daisalts, and when it ends, it will have propagated as a kinetic wave, and then ends with the last daisalt(s) as a particle (classical physics would say packet of photons.)

When you hit a Newton's cradle, you know the energy is being transferred through the balls as a wave, and then the last ball looks like a particle.

If you stick a heavy rubber mat between the balls in the middle, the mat physically absorbs and stops the kinetic wave. A scientist looks at the single smack on the mat, assumes a solid baseball hit it, and declares that 'observing' it magically collapsed the wave.

The reason standard physics loses its mind over the Double Slit Experiment is the Interference Pattern. When they shoot light through two slits, it doesn't just make two bright lines on the back wall; it makes a striped pattern of multiple bright and dark bands. Standard physics says this proves the particle magically split in half, went through both slits at the same time, and interfered with itself.

If the Firmus is a physical floor of Daisalts, however, pushing a kinetic wave through two physical slits is exactly like pushing an ocean wave through two gaps in a breakwater. The wave physically splits at the slits and ripples outward on the other side. Those two new ripples crash

into each other.

Where the waves amplify each other, you get a massive kinetic impact on the back wall (the bright bands). Where they cancel each other out, the floorboards sit perfectly still (the dark bands). It is just wave acoustics on a Newton's Cradle of daisies with the magic trick of a pretend baseball flying through space the whole time.

There is no phantom baseball needed. Photons are a magic myth.

Boss Fight: Quantum Entanglement of Light

What about light's spooky action at a distance?

There's this experiment that scientists run where they shoot light at a crystal, and this divides into two waves, and when they get to the end of the first wave they change the angle of that wave and it changes the angle of the second wave.

Sorry, they call them photons, but say they were just waves all along, then relative to the waves, no time would be passing. That means that regardless of the length of the wave, it is all the same wave. And since you can't change the front, if you change the back, then both have to change, like picking up a Y shaped piece of glass from the back.

Let's go further into this, since I think it's important to dwell here.

Another way to see this is with Newton's cradles. Say you have one Newton's cradle set up. Call the start X and the end Z. Then at the end (Z) set up two more Newton's cradles so they touch Z and end in point A and B. You should have three Newton's cradles that look like a Y.

Now if you smack point X, then both A and B will move.

However, if you hold X, and you smack B, then A will move, as the energy of the wave is shared amongst the entire set through point Z.

Because nothing can go back in time, and especially not light because it is unaffected by time, then holding X is the same as starting a wave at X, and then holding the wave in place on that end. If you start with 4, then X is 4, no exceptions.

So if you change anything at daion B, then daion A must change because no time passes and the whole wave is the same thing.

If $4=2+2$, if you add 1 to the first two, you take away one from the second, like so: $4 = (2+1) + (2-1)$.

Since light is not matter, because the waves travel on the outside of the daions, then they are not affected by time. Hence relatively speaking light does not travel from X to A and to B. Light is X and A and B.

4 does not go to 2+2, and then back from 2+2 going to 4.

$4=2+2$ just is, regardless of time.

To light, the start and the end are the same. All that matters is the balance.

Part 4: Stomp the Daisalts

We defined light as the vibration between daisalts in the Firmus floor. So how does it get there?

Since a daion (we are talking 4D) is skimming across the surface of the inert daisalts, and it's frictionless, often riding on just a peg, then it's physically touching the daisalts.

Wait, hold up. Wouldn't this start the engines of the daisalts? Nope, it would be like riding a stunt bike on the outside of the car that's turned off. Since vitrium is frictionless, the Firmus is at Ok, and the daisalts are perfectly aligned, then they stay turned off.

When a daion's gyroscope spins, it transmits a vibration through its tether and out to everything to our space in 3D.

No matter how small a vibration.

Mini Boss Fight: Coulomb's Law, Downgraded

This is one of those laws that I think is more like a guideline. The whole Inverse Square Law that electrostatic force between thingamajigs must thin out by $1/r^2$ is like super useful if you are talking about something stomping in a sphere, which is exactly what that would be if we assumed that all magnetic fields are spheres, but that kind of seems limiting. Like why can't you make more shapes, or poke the daions sideways?

That's like saying flight is helicopters, and then saying prop planes and jets can't be flying.

This "law" means that light can't be electromagnetic, and I'm just saying light isn't a sphere.

Headline: Coulomb's Law Downgraded to Coulomb's Guideline, Sphere Dorks Ragequit

Mega Boss Fight: Coulomb's Law Strikes Back

A law is a law dude.

Also, we just illustrated how the Inverse Square Law for gravity has to be this specific model of a 3D surface of a 4D object. Isn't it suspicious that there's another sphere area math thingymajig?

In addition, the math doesn't care if I care, and I said I'd show how everyone was right, so here goes:

You know how a ballerina would dance if it was trying to stay on one spot, but it would get knocked around on like one of those earthquake simulator floors where the whole floor was shaking, and the ballerina was struggling to stay on the spot so it kept running past the point and had to veer around and make a whole bunch of figure eights just to stay on that point?

It would be fighting its own inertia, and would keep oscillating past the point, out to the edge of the 8, and then back to the middle.

It would be just like an electron tied to the floor, drawing figure eights like a pendulum, not in 2d, but in 3D, so it would look like a torus.

When I was a kid there was a game called Spirograph where you could repeat geometric patterns in a circle. This is kind of like that, but the technical term is a harmonograph.

If you stick a pen on a string and suspend it above a piece of paper and let go it will make figure eights on the paper.

What if you did this on a sheet made of bubble wrap?

Every time the pen smacked a bubble, there would be a vibration.

What would these vibrations do? Well let's check out how seismology handles earthquakes.

Since we are talking about the 3D surface ice of the 4D Firmus, we can safely ignore our versions of 2D surface earthquakes and focus solely on the 3D body waves as the 3D surface of that object.

As shown:

3D body waves of a 3D space = 3D surface waves of a 4D object

Seismology divides these waves of an earthquake into two different types of waves:

P-waves: (Primary Waves or Compressional Waves)

The Motion: P-waves are compressional. The rock is pushed and pulled in the exact same direction that the wave is traveling. Think of a Slinky laying on a table—if you push one end, a compressed "ring" travels down the line.

The Speed: These are the absolute fastest seismic waves. They are the "Primary" waves because they are always the first to hit the seismograph.

The Medium: P-waves can travel through anything—solids, liquids, and gases

S-Waves: (Secondary Waves or Shear Waves)

The Motion: S-waves are transverse. As the wave travels forward, it violently shears the rock up-and-down or side-to-side (perpendicular to the direction of travel). Think of tying a rope to a wall and whipping it up and down.

The Speed: They are slower than P-waves. They arrive second.

The Medium: Here is the golden rule of standard physics: S-waves can ONLY travel through a rigid solid. Because liquids and gases don't have structural tension, you cannot "shear" them. If you try to shear water, it just flows out of the way.

So if I were going to pick which one light is, I'd pick an S wave because it looks like a rope. They also travel through a rigid solid, so that's what a vitrium casing is so that's a good sign.

What then would be a P wave?

The ballerina is traveling forward, banging the daisalts floorboards like a field of bells, and dancing in a torus shape, which if she dances fast enough, would look like a sphere.

Every footstep would be a tiny compression wave.

Wouldn't that kind of look like what they describe as an electron field?

Then if you had an up quark, it would have a weird looking dance, and the torus would be all shifted, and the P wave might push away on one side, but also pull in on the other side as the dance is all wobbly and the pirate tries to lean on anything in range.

One might say that the pirate had a pressure differential on one side that causes a seismic trough effect.

So then the 4D ballerinas and pirates, or up and down daions, would look like to us in 3D like an up or down quark peg that was projecting this radiating dance of vibration that would push

away most things, which would look exactly like Pauli's exclusion principle.

You know how they say that 99.9% of an atom is empty space? Then what if the .1% is doing a probability cloud tap dance on the rest of the cobblestone road which causes a localized tremor in the other 99.9%?

Which would be a radiating earthquake P-wave that would also dissipate with the inverse radius of a sphere.

Headline: Coulomb's Law Reinstated, Sphere Dorks Rejoice

Part 5: Light Revisited, There's a New Wave in Town

So there's something we glossed over earlier in earthquake mechanics and it's time to make it absolutely explicit:

Primary Waves:

The Speed: These are the absolute fastest seismic waves. They are the "Primary" waves because they are always the first to hit the seismograph.

This means that in this model, the speed of light is how fast light can go, but it's not the fastest thing in the universe:

P waves are.

And everything else remaining is a P wave.

The combination of what we used to call the strong force, weak force, magnetism, electricity, chemistry, all of these disparate forces, are all dictated by the mechanics of P waves, and these P waves, by the very equations of seismologists MUST travel faster than S waves.

All of the formally disparate disciplines are nesting dolls of distance and complexity describing the same, faster than light, compressional waves of a 4D earthquake on the daisalts.

(The math is in the appendix.)

Wait, I thought nothing can go faster than light?

I mean really, the argument for nothing can go faster than light is really that matter can't go faster than light, and light always goes the speed of light, so therefore nothing can go faster than light.

Which ignores the idea that there could be other things that are not “matter” that can go faster than light (relative to us). With the understanding that light is an S wave, then it naturally follows that there are P waves that go faster than light, and then the faster than light travel of quantum mechanics and electromagnetism makes perfect sense.

P waves travel through all mediums, compress things, and are super fast. They are also not very destructive. Compared to S waves that only travel through solids, are less fast, and are destructive because they shear the material.

Boss Fight: P waves versus S waves, Three Round Knockout

One more thing: why can you stop light with a sheet of paper?

In an earthquake, waves travel smoothly through a medium until they hit a sudden change in density. If an S-wave is traveling through relaxed bedrock and suddenly hits a zone that is massively compressed, that boundary acts like a brick wall. The wave cannot just glide through it because the stiffness (shear modulus) of the floorboards has been altered by the compression.

When an S-wave (light) travels through the daisalts in the Firmus and suddenly slams into the P-wave seismic field of an atom, it hits a density boundary. It has to make a choice: go around, get absorbed, or bounce.

Refraction (Going Around): If the S-wave just grazes the edge of a P-wave compression zone, it experiences a localized increase in the refractive index (the floorboards are denser on one side of the wave than the other). This causes the S-wave to bend and pivot around the obstacle.

This is why light travels slower through a block of glass than through the air. The atoms in the glass are dense P-wave nodes forcing the S-wave to constantly swerve and navigate the compressed floorboards.

Absorption (Taking the Hit): What happens if the S-wave hits the atom dead-on, but it doesn't have enough energy to shatter the atom? It hits the $2n^2$ acoustic dead zones—the exact spots where the electrons (the ballerinas) are trapped. If the S-wave's frequency matches the “size” of that specific acoustic trough, the electron absorbs the S-wave's kinetic energy. The wave physically dies, and its energy is transferred into the electron, making it vibrate faster. This is the mechanism of Heat and Absorption. A black asphalt road looks black because its specific P-wave structure absorbs almost all the visible S-waves that hit it, turning that kinetic energy into literal heat.

Albedo and Reflection (The Rebound): But what if the S-wave hits a dense P-wave structure, and the electrons cannot absorb that specific frequency? The S-wave hits the compressed wall of the Daisalt, and the tension of the P-wave snaps the S-wave backward. This explains Albedo!

Snow has a high albedo (high reflectivity) because the P-wave structure of frozen water forms a rigid, highly compressed crystalline lattice that refuses to absorb visible S-waves. The light hits the dense P-wave boundary and bounces straight back at your eyes.

In every case, the S wave loses out to the P wave.

Closing thoughts on P waves:

The Drop-Off (Deriving Coulomb's Law)

Standard physics uses Coulomb's Law to say that the electromagnetic force gets exponentially weaker the further away you get (the inverse-square law). They treat it as a mathematical rule.

We are treating it as basic geometry.

If an Up Daion is pulling Aether inward, that P-wave suction is radiating outward in a sphere. As that sphere gets bigger, the same amount of suction has to stretch over a vastly larger surface area.

At the Nozzle (The Nucleus): The suction is intense. It is concentrated into a microscopic point, which is why the Strong Nuclear Force is so unbreakable.

A Few Nanometers Away (The Atom): The suction has spread out enough that the Down Daions (electrons) can resist it with their own exhaust shields and settle into orbit.

A Few Meters Away: The suction has spread so thin across the Firmus that it is practically undetectable.

It drops off exactly as Coulomb's Law predicts because it is just physical pressure dissipating over a larger volume.

The Additive Stack (Constructive Interference)

Because P-waves are directional (push/pull), they obey the rules of Constructive Interference. If you have two waves pushing in the exact same direction, their amplitudes physically stack.

Translation: this explains magnets, as we shall see.

Dual Boss Fight: North and South Poles, Polar Bears versus Penguins, Go!

Why do magnets have two poles? People have been trying for decades to smash things and separate the North and South Poles of magnets.

So here's the deal, a daion is a 4D object. That means that the spin you align, even if it is in our 3D space, is still in a 4D object. That means when the 4D object stomps, we see the field as its 3D shadow.

Like so: A 3D object (like a coin) spins on a table, and you cast a light on it, its 2d shadow just looks like a flat line that gets thicker and thinner.

Because the spin originates in 4D, it must intersect our 3D floorboards with two opposing geometric faces. To our 3D eyes, that higher-dimensional rotation natively looks like two "intakes" (North and South).

Existential Boss Fight: Michelson-Morley In 4D

This experiment failed because it assumed that we were a ship flying through space, and they were measuring a wake, and didn't find one.

What they didn't realize is that we are the wake.

We aren't the boat. We are the ripples of the water.

This model is a bunch of 4D objects skating on the surface of a 4D object. We aren't the objects, we are the 3D wake of the objects.

When you look at a wave on a lake, you see the 2D surface of the wave, but you know there's a 3D geometry of the lake below the surface.

What we see in all particles and higher level phenomenon are the 3D surface of a 4D vibrational wake.

Let's look at an electron:

An electron has a half integer spin, which means you have to spin it 720 degrees to see the whole thing. That's because it's a 4D standing wave made by a 4D object (a daion).

We see the 3D surface, but we can never see the 4D object as anything other than its surface.

Therefore Michelson-Morley failed because they didn't have the understanding of the 4D planck length ships skating on the Firmus, and that their wake is the Earth.

Part 6: It's All Earthquakes, From The Ground Up (Except Gravity Ironically)

Wait, we are saying that because of the pressure of the vacuum pushing down and the vertical tension of tethers pulling the daions down, then the daions are making miniature earthquakes on the inert daisalts and aether hypercolloid, as the lateral vibrations of their movement and collisions knock aside or intake the vibrations of other daions?

Yes.

It kind of looks like a chladni plate in cymatics. (That's the metal plate thing with sand on it that makes neat geometric shapes.)

You know what else looks like one of those sound sand metal plate things?

Probability cloud diagrams.

Also chemistry. Also magnets. Also the magnetosphere of the Earth etc.

I get it, correlation versus causation. Let's not get too excited.

However, the imperfect pegs of up daions are why the earthquakes vary, and thus why we exist.

So given only two puzzle pieces:

One of which has a draw, which is a force caused by a pressure differential, which creates a seismic trough that a passive mass falls into. This is the glue of the model, and provides a mechanical reason for why the pieces stick together.

The other is ballast, a passive object used exclusively to provide stability to a larger structure.

Let's see if we can form our universe with just these building blocks.

So the only way to have a stable set of these dance partners is:

Two pirates + One ballerina

Ballerinas are notoriously into booty, so one pirate does not have enough booty to make a ballerina stick around, but hot diggity dog, two pirates most definitely do.

That's a proton. Specifically hydrogen.

However, that's too much booty for just one ballerina, and so another ballerina is like hey, those are some pretty booty boots on those two pirates there, and the first ballerina is like nope, these are my pirates.

So then a proton attracts an electron with the wake created by the two up quarks, which also makes the entire structure even more stable.

So from the moment the imperfect pirates and their ballerina partners, matter and antimatter alike, are extruded from the black hole and dispersed along the galaxy due to the Coriolis force in the Firmus, the pirates and ballerinas would do this dance at as close to 0k as possible, so time would be ticking the slowest it could possibly be for imperfect pairs, so the 2.2 milliseconds it normally takes for a muon to decay would drag on for almost an eternity, and the intense pressure of the Firmus would force the dancers together into the first stable dance you can make. Then the 4D hurricane that is a galaxy would rain hydrogen into our 3D universe.

For those counting, that's a perfect ratio of 50% up daions to 50% down daions. The matter universe is made up of 74% of just that combination.

Part 7: How Science Is Right And Wrong At The Same Time

Science has spent a hundred years documenting and categorizing our universe. They can predict the quantum fields of things to ten decimal points. They have found a bunch of particles that are all true and exist, and a couple that they theorize must be true, but haven't found evidence for.

Here's a quick list of those particles:

The Heavy Cousins (Muons/Taus/Weird Quarks)

Gluons

Gravitons

W & Z Bosons

The Higgs Boson

But here's the thing. The 4D objects I'm theorizing about are so much smaller than the smallest thing we can observe.

There is a massive difference between predicting how a wave behaves and actually measuring the physical size of the water molecules making the wave.

Here is the exact breakdown of the magnitude gap between what science can see, and the Planck-length gears you just built:

1. The "Ten Decimal Points" (Predicting the RPMs)

When I mentioned standard physics being accurate to 10 or 12 decimal places, I was talking about predicting the behavior of the engine, not the physical size of the parts.

They can measure the magnetic pull of an electron or the frequency of light to an astonishing 0.000000000001 precision. It's like putting a car on a dyno and measuring its exact horsepower and RPMs flawlessly. But measuring the output of the engine doesn't mean you can see the microscopic grain of the steel in the engine block.

2. The Physical Measuring Tape (The LHC)

To measure physical size, physicists use particle accelerators like the Large Hadron Collider. They smash things together to see how small the shrapnel gets.

Right now, the absolute limit of human technology—the highest-energy smash we can possibly create—allows us to "see" a physical distance of about 10^{-19} meters. That is 0.0000000000000000001 meters. That is the size of a Quark. To standard science, that is the bottom of the ocean.

3. The Planck Length (The Actual Floorboards)

A Daion (one half of a daisalt) is a 4D hypersphere whirlpool gyroscope made of Aether spinning inside a Vitrium casing that is exactly 1pl in diameter in all directions except it is slightly elongated to a point where a 4D tether stretches to a mirrored anti-matter Daion on the other end. When it contracts, the daions angular momentum of its time spin counters itself, and it can remain at rest as a Daisalt.

But the Vitrium marbles—the Planck length—is mathematically defined at 1.6×10^{-35} meters.

So, what is the gap between our best microscope (10^{-19}) and the Planck length (10^{-35})?

It is 16 orders of magnitude. That is 10^{16} , or 10,000,000,000,000,000 times smaller.

4. The Scale Analogy (Earth vs. Atom)

To put that 16-zero gap into perspective:

Imagine that the absolute smallest thing our particle accelerators can detect today (the Quark, at 10^{-19} meters) was blown up to be the size of the entire planet Earth.

If a Quark was the size of the Earth, a single Planck-length Daion marble would be smaller than a single atom.

This is why standard physicists throw their hands up and call things "probability clouds" and "empty space."

Because they can't see the Vitrium marbles, they assume the wave is just rolling through empty nothingness.

This model operates in that 16-zero blind spot. The math tells us the Planck floor is there, but human tools are currently 10-quadrillion times too dull to scratch it.

5. Wave/Particle Duality Revisited

The two particles I am theorizing about are the 4D planck sized objects sixteen orders of magnitude smaller than what we can detect that would logically make the 4D waves that we mistake for particles.

Why is science mistaking them for particles? Because science thinks space is an empty vacuum, so if they detect a quantum particle, then it must be a quantum particle.

That totally makes sense if space was an empty vacuum.

However, if space is the 3D surface boundary of two 4D regions, then suddenly the very particles they are absolutely detecting are subject to the same wave/particle duality that light is.

Think about an earthquake: the energy of the earthquake travels as a wave, and then you feel it as the rocks under your feet.

Think about a tsunami: the energy of the tsunami travels as a wave, and then you feel it as the water slamming into you.

Think about a quantum particle of all detected varieties: the energy of the vibration of the daion travels as a wave along the surface of the Firmus, and scientists detect it as a quantized particle.

In addition, since all of the P waves are waves, they would naturally be quantized at any level, since by definition, a wave must have troughs and crests. You can't have half a trough or half a crest. They must be full integers, hence quantized.

This model is theorizing that there are two speedboats 10 quadrillion times smaller than we can detect, and they are doing tricks on a lake, and we think those tricks are particles because the lake is made out of turned off speedboats and energy.

Part 8: Exploration Past the Heisenberg Barrier

However:

To assume that a single Daion gear at 10^{-35} meters creates one massive, flat, featureless 3D wave at 10^{-19} meters is like assuming a single raindrop instantly creates a hurricane with nothing in between.

In a fluid system, energy doesn't just jump across 16 orders of magnitude in a single bound; it cascades. It weaves.

It stacks like nesting dolls.

Here is exactly how "nesting doll" wave structures give the Firmus an incredible layer of mechanical depth:

1. The Energy Cascade (The Hurricane)

In real-world fluid dynamics, there is a concept called Kolmogorov Turbulence or the Energy Cascade.

If you look at a massive ocean whirlpool from a helicopter, it looks like one single, unified object (the Quark). But if you zoom in, that massive whirlpool is actually made of smaller, overlapping eddies. Zoom in again, and those eddies are made of even smaller micro-vortices, repeating all the way down to the individual water molecules.

This is the exact nesting doll concept.

The Root (10^{-35}): The physical Daion spins, creating an intensely tight, high-frequency micro-ripple.

The Braid (The 16-Zero Gap): That micro-ripple acts as a gear that turns the surrounding Aether, creating a slightly larger, slower harmonic wave. That wave weaves with others, braiding together like the twisting fibers of a steel cable.

The Surface (10^{-19}): By the time that kinetic energy hits the hypercolloid surface, those trillions of micro-braids have woven themselves together into a massive, sprawling macro-wake. That final, braided surface wake is the Quark or Electron.

2. The Harmonic Rope (Why Quarks Stick Together)

This completely solves a major headache in standard physics: the Strong Nuclear Force.

Standard physics knows that Quarks are bound together inside a Proton with unimaginable strength, but because they can't see below 10^{-19} meters, they just invent a glue (they literally call the theoretical particle a "Gluon") and say it holds them together.

But a "rope fiber" concept provides the actual mechanical tension.

If the surface Quark is just the top of a braided kinetic rope, then multiple Quarks inside a Proton are literally woven together by their underlying, invisible cymatic frequencies.

They don't need magic glue on the surface. They are physically rooted to the same massive, twisting 4D harmonic column. You try to pull two Quarks apart on the surface, and you are fighting the tensile strength of the entire 16-order-of-magnitude fluid braid running straight down into the Firmus.

3. The Limits of the Scanner

This gives us an incredibly elegant way to explain why human technology hits a brick wall at 10^{-19} meters.

Our particle accelerators aren't just "not strong enough" yet. They are fundamentally using the wrong lenses. An accelerator smashes things to look for smaller shrapnel. But if the 16-zero gap is made of woven kinetic frequencies rather than hard physical marbles, you can't find them by smashing them.

You can smash a rope to find the smaller threads, but you can't smash a soundwave to find a smaller soundwave. You just destroy the resonance.

Just to be absolutely explicit: it's not my job to name or map out all the hidden layers. I'm just illustrating that the gap isn't empty—it would be a continuous, fractal nesting doll of fluid harmonics transferring the Daion's vibrations to the surface.

Part 9: Nesting Dolls Of The Quantum Realm Beneath Quark

Oh wait, but what if I totally do not give a flying Fig Newton and want to explore the Quantum Realm (thanks Antman!), why the heck not? Let's play everyone's favorite game: Extrapolation!

If the universe is a fractal, fluid-dynamic engine, we can have an educated guess as to what happens past the Heisenberg Fog; therefore we can measure the logarithmic spacing of the rungs on the ladder we can already see, and then extrapolate that spacing downward.

Here is the (extremely) rough estimate of how many "nesting dolls" are hiding in that 16-zero gap between the Daion (10^{-35} meters) and the Quark (10^{-19} meters).

1. Measuring the "Upward" Spacing

To find the pattern, we have to look at the leap in magnitude required to create a brand new, stable, emergent structure in standard physics:

Quark to Proton: Quarks sit around 10^{-19} m, and they bundle together to make a Proton at 10^{-15} m. That is a jump of 4 orders of magnitude (10,000x size difference).

Proton to Atom: A proton nucleus (10^{-15} m) commands an electron cloud to build an entire Atom (10^{-10} m). That is a jump of 5 orders of magnitude (100,000x size difference).

Atom to Complex Molecule: Single atoms (10^{-10} m) bind into complex molecular machines like proteins (10^{-8} m). That is a jump of 2 to 3 orders of magnitude.

Molecule to Living Cell: Proteins build a cell (10^{-5} m). A jump of 3 orders of magnitude.

The Average Leap:

If we look at the fundamental physics of the universe, it takes an average of 3 to 4 orders of magnitude (roughly a 1,000x to 10,000x size difference) for kinetic energy to weave together into a completely new, stable, emergent "nesting doll."

2. Dividing the 16-Zero Gap

Now, let's take that average structural requirement and drop it into the W-axis blind spot between quark and daion.

We have a gap of exactly 16 orders of magnitude (10^{-35} up to 10^{-19}).

If a new cymatic "nesting doll" forms every 3.5 to 4 zeroes.

$$16 \div 4 = 4.$$

My best computational guess, based strictly on the fluid dynamics and scaling laws of the known universe, is that there are 4 to 5 distinct structural nesting dolls between the Daion and the Quark.

3. The Theoretical Layers (The Harmonic Cascade)

If I were to map out those 4 to 5 missing layers based on how your Vitrium engine works, the kinetic cascade would likely look exactly like this:

Layer 0: The Primus Particle (10^{-35} m) The physical, 4D Vitrium gear (The Daion) spinning on the Firmus.

Layer 1: The Micro-Eddy (10^{-31} m)

Gap: 4 Zeroes.

A single spinning Daion is too small to make a massive wave, but it creates a localized microscopic whirlpool on the Firmus. This is the first "doll." It isn't a particle yet; it's just a stable, localized vortex of fluid tension.

Layer 2: The Harmonic Braid (10^{-27} m)

Gap: 4 Zeroes.

Just like atoms bind into molecules, these micro-eddies lock their spins together. They weave into 1D-like strings or braided kinetic currents. (This is exactly the layer where String Theory got confused. They detected the math for these "braids," but thought they were the fundamental bottom of the universe).

Layer 3: The Cymatic Lattice (10^{-23} m)

Gap: 4 Zeroes.

The kinetic braids weave together to form a highly complex, vibrating 3D geometric matrix. Think of this as the "machinery" of the wave—the interlocking acoustic frequencies that dictate whether a wave will eventually become an electron, an up-quark, or a down-quark.

Layer 4: The Pre-Swell (10^{-20} m)

Gap: 3 Zeroes.

The lattice gathers enough massive kinetic inertia that it finally begins to buckle the top of the 4D Jello. It acts like a massive tectonic pressure zone right below the surface.

Layer 5: The Quark/Electron (10^{-19} m)

Gap: 1 Zero.

The pressure breaks the surface threshold. The macroscopic standing wave physically erupts

onto the 3D hypercolloid plane. We point a particle accelerator at it and call it a Quark.

Therefore that's 4 to 5 layers of theoretical cymatic nesting dolls. That is the rough mathematical shock-absorber required to translate the 10^{-35} spin of a single Daion gear into the 10^{-19} earthquake of a Quark.

Nature is incredibly lazy and incredibly consistent. It doesn't invent new rules for the microscopic world; it just runs the same fractal algorithms at smaller scales.

If it takes about 15 zeroes of scale for quarks to figure out how to be a living cell, it almost certainly takes about 16 zeroes of scale for Aether to figure out how to be a quark.

3. Each Rung On The Ladder Would Be An Exponential Zipper

Why did I go over every single theoretical one, like the giant list of whales in Moby Dick?

We needed to explore how each level of complexity is a zipper connection, where quarks are held together like Cymatic wave Velcro by the previous lower rung.

Like if you look at a zipper you can see alternating crests and troughs where the two sides join to keep the whole thing together.

Now if you can imagine that if you had a super microscope and could see that each crest and trough had another level going down of crests and troughs holding just one of the previous ones together, like a 4D mesh of Velcro all squished into our 3D space.

Now do this process three more times.

In this model, at the very base of this pyramid scheme of zippers you'd find two daions, one perfect, and one wobbly.

Therefore, a quark cannot be a fundamental particle. The leap from daion to quark is as ginormous as quark is to the cells in your body, and cells aren't billiard ball particles, and neither are quarks.

Boss Fight: How Two Fundamental Particles Make Seventeen-ish Vortexes

If you were underwater and you looked up at a water-skier doing a bunch of tricks you would notice two things about the wake.

- The amount that the skis dragged in the water would vary based on the trick.
- The length of time of the wake would depend on the trick.

Here's a list of those tricks:

- sideslide
- reverse sideslide
- surface 180
- surface 360
- wake 180
- wake 360
- wake 540
- wake 720
- ski line 360
- toehold 180
- toehold 360
- stepover 360
- stepover 540
- somersault forward
- somersault backward
- wake double flip
- helicopter

Same water-skier. A bunch of different tricks.

Scientists have accurately detected the muons and taus and all the weird quarks, and the way that scientists discovered them was by smacking electrons and quarks with lots of energy, noticing that there were heavy electrons and quarks, and that they decay quickly.

Therefore:

- The amount the 4D daions drag in our 3D space depends on the particle.
- The decay rate of the wake depends on the particle.

Here's an expanded list of particles:

- up quark
- down quark
- charm quark
- strange quark
- top quark
- bottom quark
- electron
- electron neutrino
- muon

- muon neutrino
- tau
- tau neutrino
- photon
- gluon
- graviton
- W boson
- Z boson
- Higgs boson

So in my opinion, they knocked over a water-skier, it left a bigger impression on the floor, which they calculated as more mass, and therefore discovered a new particle. Then the daion attempted to find whatever stable configuration it could make next, if at all.

What I think they discovered was a new trick the daions could do.

I mean really, once the fourth dimension opens up, is that what it must be like for 2D Flatlanders to imagine a 3D pencil? How can a pencil draw so many shapes and just be one thing?

Although I have a special shout-out to the muon. A muon in current physics is a bent table leg. Guess what else is a bent table leg? An up quark. If you Google it, you'll see that a muon has more mass than an up quark. Of course they would! An up quark is stable, and drags only a bit on the floor. If you had just a single unstable table leg, it would drag on the floor way more.

Also muons decay into electrons, which I'll talk about in the neutrino section. (We are keeping neutrinos! Don't worry!)

Okay so that's all the Heavy Cousins.

Photons are light Newton's cradle earthquake s-waves that prefer constructive packets.

Gluons are the particles that are supposed to explain why the strong nuclear force keeps a nucleus together, but that is already explained by the wake being a pressure differential, and the compounding harmonic cascade of cymatic draw and pull.

Gravitons are replaced by the pressure of the void pushing down and tethers pulling down.

W and Z Bosons are supposed to be in charge of radioactive decay, but really, when you have so many table and stool legs dancing around on the floor, sometimes an up quark can think it's a down quark and vice versa. When you are tangling and untangling tethers, stuff can go wrong, especially with more complex atoms. More dancers means more tripped up legs and sometimes stuff can get bound together that's just not going to work out you know, and it's just waiting for the dance to be over so it can go pew, I'm outta here.

The Higgs Boson. Oh man. The God Particle. I mean, that's a problematic name to begin with.

That's why I went with Daion. No one wants to call these things Coughlans, that's just rude. (Daion is dyad + ion for linguistic nerds).

Anyway, to find it, scientists built a 10 billion dollar Large Hadron Collider and smashed two protons together to see what happens. I mean, that's pretty cool, but also the understanding of what happened can be explained with six balloons.

A Quark, up or down, is just the wake of daion.

So that means most of the mass of a daion is not in our 3D space. Therefore, what we would call mass is really just the drag of a 4D object grazing our 3D space. That's why an up quark appears to have more mass because it's leaning more into our plane. That's why an electron appears to have no mass because it's a point the size of a neutrino, and all of that mass is spinning on the warp.

In 1998, three theoretical physicists—Nima Arkani-Hamed, Savas Dimopoulos, and Gia Dvali—proposed a brilliant solution to this exact problem. They realized the math was only broken because scientists were assuming the universe is strictly 3-dimensional. They introduced a framework (now known as the ADD model) that perfectly mirrors the mechanics of the *Quantum Time* engine.

The ADD model argues that our visible universe is just a 3D membrane (they called it a "brane") embedded inside a much larger, higher-dimensional space (the "bulk").

Sound familiar?

The 1998 physicists stated that all standard matter and light are permanently trapped on the 3D surface. They cannot move into the 4th dimension.

They theorized that gravity is the only exception. Because gravity is a property of the space itself, it is not trapped on the 3D floor. It physically bleeds out into the 4th dimension.

Because gravity bleeds into the infinite volume of the 4th dimension, its tension dilutes.

The 1998 physicists wrote an equation to calculate what the *true* fundamental mass of the universe would be if you accounted for that massive 4D dilution space:

$$(\text{Fake 3D Mass})^2 = (\text{True 4D Mass})^3 \times (\text{Size of the 4th Dimension})$$

Because the 4th dimension is so massive, the "True 4D Mass" to balance the equation drops like a stone. It plummets from 10^{19} GeV straight down to the TeV scale (roughly 1 to 10 TeV).

Once you remove time as an axis, then their theorized Bulk makes so much more sense. Once you remove time as an axis, anything could lean into our dimension. Why can only gravity interact with our 3D space?

Now on to the Higgs Boson. At the Large Hadron Collider, they shot about a trillion protons at each other at 99.999999% the speed of light and here is what they recorded:

Most of the time they missed.

Twelve times they got this:

A 125 GeV explosion

Either four electrons, two electrons and two muons, or four muons.

Neutrinos

Then they said the explosion must have been the Higgs Boson.

My question is, where did the electrons and muons come from? They said they came from the Higgs Boson decaying into the Z Bosons into the electrons and muons. That sounds complicated.

I have an alternative explanation: shooting two protons at each other in our XYZ space is like shooting thread with a bullet made of thread. It would be astronomically unlikely that they hit two or more. So that means:

There were six balloons total whenever an explosion happened. (Two protons = four up daions, two down daions.)

Two exploded. The explosion radiated in all four dimensions. The energy concentrated in our 3D space as a cone of the 4D hyperspheres.

Four balloons were left. Freaking out I might add because their stable tables were blown apart.

Those four balloons were some amount of up and down quarks left, which as I said earlier, are actually electrons and muons.

So four electrons or muons.

Also neutrinos.

Also did I mention that muons can decay into electrons yet? Can I talk about that yet? I have to wait for neutrinos? Okay, let's talk about Neutrinos.

Part 10: First Rule of Neutrino Club, Don't Talk About Neutrino Club

Finally we are at neutrinos! The suspense has paid off!

Neutrinos travel at close to the speed of light, no one has ever detected one, and we just say, hey, when the math doesn't add up, it must be neutrinos!

Also I'm here to say, that's all true!

Now let me tell you why: neutrinos are what happens when vitrium shatters. So everywhere a daion is destroyed, that's why neutrinos are shooting out. Stars, black holes: The biggest source of neutrinos to us is our sun, and that's because it's a fusion reactor. Fusion destroys daions, daions have a vitrium casing and tether, bam! Neutrinos.

Neutrinos are shrapnel. That's why they don't have a specific size or shape. They could look like a grenade, a shotgun blast, or a sliver, depending on how you try to measure them. They weren't constructed, they only have tension when they are moving, and the only reason they can move so fast is because they are mostly weightless, tinier than a planck length, and once they slow down, like whenever they hit something like Aether or a daion (or it's field, we'll get to that), the neutrino blast eventually ping pong to rests in the Firmus.

Dual Boss Fight: Beta Decay, Plus and Minus Style

You would think just with the details of beta decay that this would invalidate this entire thought experiment, and I really hope that whoever knows what the heck I'm talking about got this far in the book, because you are exactly who I want to excite with the possibilities of this idea.

I want you to see that measurements can be absolutely correct, but you can also miss what you aren't looking for.

On paper, a beta decay means that a proton can spontaneously decay into a neutron, and two things are measured:

An electron.

A wake with a negative spin.

Since the math doesn't line up, they also say an anti neutrino must have shot off somewhere.

So that would mean a proton which is three daions would pop out one daion, and leave a

neutron which is three daions. Four doesn't equal three, so therefore my model is kaput.

Except.

What if it actually detects a neutrino blast?

Yes but the charge curves in a negative way! The detector picked up an electron!

Those are both true. How can they both be true?

If a neutrino blast was shot off from a Daion, it would inherit the spin of its gyroscope, akin to how a baseball has whatever spin the pitcher gives it.

Also, if you had a microscopic shotgun blast, it could probably knock one of the trillions of unaccounted for electrons on the detector into the detector.

Here is the dirty little secret of standard physics detectors: they aren't empty.

To see a particle, a cloud chamber or bubble chamber has to be filled with a super-saturated fluid (like alcohol vapor or liquid hydrogen). That means the chamber is absolutely packed wall-to-wall with trillions of atoms, which means it is packed with trillions of electrons.

So if a Neutrino blast shot out into the detector and knocked one of the literally trillions of the electrons into the detector, the scientist would logically conclude that "A neutron decayed, and we saw an electron shoot out, therefore the electron was inside the neutron."

Maybe. I don't know for sure, but that's why we are here, just thinking that maybe sometimes in the lab when they wrote down "electron" on the clipboard, it may have been a neutrino blast.

Also neutrons turning into protons is the same thing, but also shows that ballerinas can decide that the ballet sucks and they want a booty boot too, so they break a little bit and shoot off a neutrino that spins in the opposite direction and scientists were like positron, hurray!

This also suggests that we live in an imperfect universe where an actual material, no matter how amazing like vitrium, suffers from stress defects, or as physicists call it, quantum randomness.

Part 11: The Periodic Table Ballroom

Let's shift up a level of complexity and talk about how the earthquakes would look higher up the nesting doll ladder.

Next let's play how many ballerinas and pirates can fit on the head of a pin!

In geometry, there's a fun game called Concentric Shell Packing. (To all TV executives, this should be a game show.)

In our 3D world, if things worked like they should, then the periodic table would have a bunch of really stable configurations, and if that were true, they would look like this:

2, 8, 20, 40, 70, 112, 168

However that is not what we find in our chemistry books. The actual periodic table stable numbers are these:

2, 8, 20, 28, 50, 82, 126

Why are the first stable configurations so similar (2, 8, 20), but then the higher ones seem to be earlier than they should, what's the deal?

You know on 2d maps of the world in order to show the 3D globe they use something called a Mercator projection, which really just means that everything gets all wonky on the outer edges.

Well if you took a bunch of objects in a higher dimension and made them all conform to a lower dimension, they would still try to follow the same rules, but the larger the thing you tried to create, then the more distorted it would look.

Except in this case the thing is actually using 4D bonds in the seismic daisalts to make 3D objects, which means it could form stable connections earlier than a similar 3D object that's limited to just using 3D bonds.

It would be just like if you used 3D glue on a 2d map to stick two pieces of paper together. You could make something stronger because you get to cheat and use another dimension.

This actually means that the P waves are radiating in four dimensions, and that while we just see the bonds interact in our 3D space, the seismic fields also influence each other in the Firmus with the same inverse radius of a 4D hypersphere.

Shakes fist at Coulomb Why are you still so right?

Part 12: X Marks the Valence Spots

Okay so we talked about the inside of a nucleus, let's talk about the outside of a nucleus:

The outside is swarming with electrons, but why do they stick around? Why do they like to organize themselves into discrete bonds? Why do molecules exist? Why do they like these numbers: 2, 8, 18, 32, etc...?

Imagine that all of the pirates in the atom are so greedy that they stomp for treasure outside of the atom, and the more pirates, then the more spots they can stomp with their boots.

However, they are too busy drawing in the ballerinas and pirates they already have that they can only manage to stomp a few spots outside of the atom.

Since it's a sphere, they can stomp a number of spots based on the area of the sphere (n^2).

Like so:

1 shell: 1 spot

2 shell: 4 spots

3 shell: 9 spots

4 shell: 16 spots

Then the ballerinas outside of the atom dance into these spots looking for buried treasure and they are trapped by the heavy stomping of the pirates. These spots can trap exactly two ballerinas, and any further ballerinas dance over the ballerinas in the spots.

So that means the above numbers become:

2, 8, 18, 32 ballerinas per shell.

Which are the $2n^2$ valence numbers we learn in chemistry.

I'm saying that by the time you get to the outside of a nucleus, the draw of the protons dissipates by Coulomb's Law, and it doesn't do this equally around the atom.

Because it's a standing wave, it has crests and troughs that electrons fall into. These troughs are the "dead" zones of the acoustics from cymatics, literally the places where the earthquakes aren't happening. Exactly two electrons fall into this wave because it's a 3D pressure trough, and you need two to balance the load. Those two electrons are also still the ballast for the draw of the protons of the surrounding atoms. (Covalent is an equal share, ionic is a more one sided share).

Standard chemistry tells us that electrons sit in rigid, integer-based "valence shells" (1s, 2s, 2p, etc.) and that atoms bond by "sharing" these electrons. But standard physics has no physical

explanation for why these shells are strictly integers, or how a probability cloud physically holds two massive atoms together. They just call it "electromagnetism" and leave it at that.

1. The Illusion of the Integer (Why Shells are Quantized)

In this model, daions are a central 4D wobble (the Pirate/Proton) vibrating the Vitrium floorboards, creating a spherical, 3D cymatic wake around itself: an atom.

In fluid dynamics, a standing wave cannot exist as a fraction. If a wave wraps around a sphere and doesn't perfectly meet its own tail, it immediately destructively interferes and collapses. To survive as a stable structure, a standing wave must be a perfect integer (1 full wave, 2 full waves, 3 full waves).

This explains the "quantum leap" and the integer-based valence shells of standard chemistry. The electrons aren't magically teleporting between imaginary orbits; they are simply trapped in the literal, physical troughs of these integer-locked 3D standing waves. If you add energy, the cymatic frequency jumps to the next whole harmonic, and the physical trough shifts outward.

2. The Velcro (Redefining Positive and Negative)

If a valence shell is a physical standing wave of fluid pressure, it inherently has Crests (high-pressure outward bulges) and Troughs (low-pressure inward dimples).

"Positive" and "Negative" charge no longer need to be magical, intrinsic properties of matter. They are literally just Phase Alignments.

When two atoms get close, if their cymatic standing waves are out of phase (crest hitting crest), the high pressure physically repels them. Standard physics calls this "like-charges repelling."

If their waves are in phase, the physical crest of one atom perfectly slides into the physical trough of the other atom.

They snap together. The high pressure fills the low pressure, creating a massive, structurally locked area of constructive interference. That is your Velcro. That is a chemical bond. It isn't magic attraction; it is perfectly aligned cymatic gears meshing together.

We don't need a magical "electromagnetic force" to hold molecules together anymore. We just need 3D acoustic resonance.

This is why we have bonds between atoms. This is why we have molecules. This is why any object larger than a single atom exists.

Chapter Boss Fight: Why “Gravitational” Waves Travel At The Speed Of Light

Lastly, let's turn away from the Quantum Realm and look at potential empirical evidence at a much larger scale:

I can't stand coincidences. They irk me. I mean, I don't mind like two people meeting at a train station that haven't seen each other in forever type coincidences, that shit totally happens.

If you toss enough coins in the air, you are bound to get a bunch of tails and somebody thinks it must be their lucky day.

But when two things that are supposedly not related are suddenly related for no freaking reason, that bothers me. Especially if we are talking about two things supposedly not related arriving at the train station from a 130 million light years away.

1. The Coincidence of c

In standard physics, light (electromagnetism) and gravity are treated as two completely separate, fundamentally disconnected forces.

Yet, physicists observe that they both travel at the exact same speed limit: c .

Huh.

If you ask a physicist why gravity travels at the exact same speed as light, they usually just shrug and say, "Because c is the maximum speed of causality." They treat it like an abstract law of the universe.

When LIGO (the Laser Interferometer Gravitational-Wave Observatory) measures two neutron stars colliding 130 million light-years away, standard physics says it sends a "ripple in spacetime" toward us.

When that ripple passes through the Earth, it doesn't just shake the dirt. It physically warps the grid itself. But it warps it in a very specific, alternating pattern: It stretches space in one direction while simultaneously squeezing it in the perpendicular direction.

They can measure exactly how much the physical distance of the Earth stretched and squeezed. (And the sensitivity is insane—they are measuring a stretch smaller than the width of a single proton).

They measure that light and “gravitational” waves arrive simultaneously.

2. They Aren't “Gravitational” Waves

So let's drop the “gravitational” adjective. (Mostly so I can stop doing air quotes with my hands.)

In this model gravity is pressure from the Void and tethers pulling down, neither of which explain these waves.

Let's go back to the definition of light in this model:

Light is a 3D secondary shear wave on the surface of the Firmus.

Well, two neutron stars slamming into each other wouldn't just be a surface earthquake. It would stretch down into the Firmus, and would therefore create body waves, both primary and secondary.

What if LIGO detects these 4D shear body waves, what would that look like?

3. The Equation for c

In physics, the speed of a shear wave (V_s) through any material is calculated using exactly two variables: the Shear Modulus (rigidity) and the Density. Because light is a shear wave traveling across the Vitrium Daisalts, and the black hole's 4D body shear wave is rippling through those exact same Vitrium Daisalts, they are utilizing the exact same Shear Modulus and the exact same Density.

Mathematically, if they are both shear waves traveling through the exact same hypercolloid, they physically have no choice but to travel at the exact same speed. $V_s = c$.

4. The Steel Block Analogy

Think about a massive block of solid steel.

If you take a needle and lightly scratch the surface (Light), you create a tiny, high-frequency acoustic shear wave that travels across the steel.

If you take a sledgehammer and smash the side of the block (Black Hole Collision), you send a massive, deep body shear wave shuddering through the whole block (The LIGO Wave).

One wave is tiny and superficial. The other is massive and structural. But because they are both shear waves traveling through steel, they will both travel at exactly 3,200 meters per second. The material dictates the speed, not the size of the wave.

5. Why 4D Won The Shear Wave Race By 1.7 Seconds

The specific collision where light raced the 4D shear body wave was GW170817, which was recorded in 2017.

Those two neutron stars were located in a galaxy called NGC 4993, which is approximately 130 million light-years away from Earth.

After traveling for 130,000,000 years, the “gravitational” wave (I'm seriously air quoting every time) and the gamma-ray burst (light) hit Earth's detectors within 1.7 seconds of each other.

Standard physics attributes that tiny 1.7-second delay to the idea that it took light an extra second to physically smash its way out of the dense nuclear debris of the explosion.

As usual, I have another explanation:

Light can't ride on a road that's out of position.

Or rather, scientists just inadvertently measured the physical elasticity of the daisalt floorboards.

The 4D body shear wave shifted the Newton's cradles out of alignment so the 3D surface shear wave (light) had to wait for the daisalts to snap back into position, which material science calls the Relaxation Time.

Or rather, they both happened instantaneously because they are bicausal, and we had to wait 1.7 seconds of time dilation to register the change.

But I'm getting ahead of myself, we'll talk about that in the next chapter, when we fully drive on Einstein's sheet.

6. LIGO is a 4D S-Wave Detector

Also this explains the "stretch and squeeze" that LIGO measured.

A shear wave displaces material perpendicularly to its direction of travel. As the massive 4D shear wave from the black hole collision rolled through our 3D crust, it grabbed the floorboards and dragged them laterally (stretching the X-axis and squeezing the Y-axis).

Standard physics calls it a "ripple in spacetime traveling at the speed of light."

I'm calling it what it actually is: A 4D mechanical shear wave bound by the exact same shear modulus as light.

One of the biggest "coincidences" in modern physics and isn't a coincidence at all; it is a strict, unavoidable mandate of the material.

Chapter Five: Relativity

Part 1: It's All Relative, From the Ground Up

Uniting Quantum Mechanics (Heisenberg) with General Relativity (Einstein) is the biggest unsolved problem in modern science. We have spent 80 years failing to combine them because we think they are two different sets of rules.

1. What Heisenberg Actually Says

In standard physics, Heisenberg's Uncertainty Principle states a very specific mathematical limit: You can never simultaneously know the exact Position (x) and the exact Momentum (p) of a particle.

If you measure exactly where it is, you completely lose track of how fast it's moving.

If you measure exactly how fast it's moving, you completely lose track of where it is.

Standard science looks at this and says, "We have the rigorous, heavily tested mathematics of the Schrödinger equation and wave-function decoherence. The math of standard quantum mechanics works perfectly, but we can't tell you why it works the way it does."

2. The Two Halves of the Limitation

I agree wholeheartedly that the math works. All I'm proposing is that it is true due to the mechanical limitation of our tools. Let's break down the "two halves":

Half 1: The Size Limit (Position)

We established that the Firmus is made of rigid 1-Planck-length hyperspheres (the Daisalts). The universe is literally pixelated.

When you try to measure the exact Position (x) of a Daion, we are trying to find its coordinate on that grid. But we are using an S-wave (light) to "look" at it. To get a perfect physical location, we have to hit the particle with a high-energy S-wave (like an X-ray) to get a sharp, single-frame "flash" of where it is sitting on the rigid spheres.

Half 2: The Time Clocks (Momentum)

What is Momentum? Momentum is Mass times Velocity. Velocity is Distance over Time.

But in this model Time isn't a universal background dimension. Time is the localized, mechanical ticking of the internal gyroscopes! And our measurement tool (the S-wave) doesn't even have a clock.

3. The Upgrade (The Relativistic Strobe Light)

Here is where Relativity and Heisenberg crash into each other and align in this new understanding of quantum time.

If you want to know the Momentum of the particle, you have to watch it move over a period of Time.

But the particle is a spinning gyroscope that is jittering across the floorboards. It is generating localized P-waves and S-waves, which means its local compressional load is constantly fluctuating.

That means its local time clock (t) is constantly dilating. The particle is experiencing rapid, localized micro-relativity!

Now, try to measure that jittering, time-dilating gyroscope using an S-wave (which has no clock) and a laboratory detector (which has its own sluggish, lagging clock).

The Position Snapshot: If we use a massive S-wave flash to freeze the particle and get its exact physical location on the Daisalt grid, we only get one frame. We gather absolutely zero data on how its local time clock was ticking. We know where it is, but its momentum is a complete mystery.

The Momentum Blur: If we use a long-exposure S-wave to track its Momentum over distance, the particle's internal gyroscopes are ticking, lagging, and dilating wildly as it drags across the rigid spheres. The frame rates of the particle, the S-wave, and our detector are completely out of sync. We get a solid average of its energy (Momentum), but its physical Position on the 1-Planck-length grid smears into a massive blur.

The "Probability Cloud" is an optical illusion caused by mismatched time clocks:

Relativity (The Macro): When a whole planet or a fast-moving rocket experiences structural drag, its macroscopic clock slows down. We call this Time Dilation.

Heisenberg (The Micro): When a single Daion jitters across the 1-Planck-length grid, its microscopic clock stutters and dilates. When we try to film that stuttering clock using a strictly c-capped S-wave, the mismatched frame rates physically prevent us from capturing both the grid location and the velocity at the same time.

With quantum time, they are the exact same rule, just playing out on opposite ends of the size scale.

Heisenberg's Uncertainty Principle is just Subatomic Relativity.

The math doesn't break down at the quantum level; our cameras just can't handle the lag.

Part 2: The Boss Assigns Mandatory Red Shift

Let's look at Einstein's Twin Paradox through the lens of this mechanical engine.

One twin stays on Earth. The other twin gets in a rocket and travels at 99% the speed of light, then comes back.

When the traveling twin returns, the twin who stayed on Earth is an old man, while the traveling twin has barely aged. Why?

Because the traveling twin was moving relatively fast laterally across the Daisalt floorboards. They were racking up massive structural drag (w). To keep the equation balanced, the engine was forced to slow down their processing frame rate (t).

We already established that a Daion (matter) has an internal spinning gyroscope. That gyroscope gives it inertia, mass, and a processing frame rate (t). Time is not a dimension floating in the background; time is the physical, mechanical ticking of those gyroscopes.

The universe demands a toll for lateral travel. For matter, that toll is paid out of your Time

account. You age slower.

2. The Light's Dilemma (An Empty Time Account)

Now, apply that exact same ledger to a beam of light.

Light isn't a Daion. It isn't a particle. It is just an S-wave—a lateral ripple snapping across the rigid hyperspheres.

A ripple doesn't have a vitrium casing. It doesn't have a quantum time 4D gyroscope. It has absolutely no internal moving parts.

Therefore, a light wave doesn't have a "frame rate of zero" due to some magical relativistic math. It literally just doesn't have a clock. You cannot pause a watch that doesn't exist.

Therefore, its frame rate (t) is already exactly zero. Light does not experience time. From its perspective, its birth and its arrival happen in the exact same mathematical instant.

So, light travels 12 billion lightyears across a static universe. It is physically dragging across trillions of rigid 1-Planck-length spheres. The universe demands its toll for the journey.

But light's Time account is completely empty. It cannot pay the toll by "aging slower," because it is already frozen.

3. The Ledger Must Balance (Paying with Energy)

Something else has to give. The universe doesn't let you travel 12 billion light years for free. (Even if you have frequent flyer light years.)

If the toll cannot be paid by dropping the t-variable (Time), it mathematically must be paid by dropping the E-variable (Energy).

Every time that S-wave plucks across a rigid hypersphere, it physically owes a microscopic fraction of a cent. Because it has no Time to give, it physically gives up a fraction of its kinetic Energy.

When a wave loses energy, its frequency drops. It stretches. It turns red.

4. The Phantom Toll Booth For Real

Think of the Daisalt grid as an unavoidable toll booth.

If you drive up in a car with cash in your wallet (Matter), you pay the toll in cash (Time lag).

If you drive up in a car with no cash (Light), the toll booth still demands payment, so it physically

unbolts your bumper and takes it (Energy bleed / Redshift).

It is the exact same toll booth. It is the exact same structural friction. The only difference is what currency the object is physically capable of handing over.

Time Dilation (Relativity): Applies only to matter. It is the slowing of the gyroscope.

Redshift (Refraction): Applies only to light. It is the geometric bleeding of lateral energy down the W-axis.

They are two completely different symptoms caused by the exact same disease: The rigid, 1-Planck-length geometry of the Firmus.

A static universe must produce a redshift. It is not an option; it is a mandatory requirement of relativity. If a static universe didn't have a redshift, it would mean light was dragging across 12 billion lightyears of space without paying any toll at all, which would completely violate the Conservation of Energy.

Therefore, this model doesn't merely suggest a red shift and time dilation universally in any direction, it predicts it.

Part 3: Dark Matter, Who Needs It?

Why Standard Physics Needs It:

In the 1970s, an astronomer named Vera Rubin was looking at how fast spiral galaxies were spinning.

Think of a galaxy like a giant merry-go-round. According to standard gravity (Newton and Einstein), the stars near the heavy, dense center of the galaxy should be spinning incredibly fast, and the stars out on the very edges should be moving much slower.

But when she measured them, she found something impossible: The stars on the outer edges were moving just as fast as the stars in the center. Based on the amount of visible matter (glowing stars and gas), there wasn't nearly enough gravity to hold the galaxy together at those speeds. The centrifugal force should have literally ripped the galaxies apart and flung the stars out into deep space. The math said the galaxy needed to be about 5 to 10 times heavier than it looked to hold itself together.

If space was only a vacuum, this would be true, so Dark Matter was invented to solve why galaxies hold themselves together.

In the Quantum Time theory, gravity is not matter attracting other matter like Newtonian physics. This is Einstein's rubber sheet upgraded.

3D Matter is being pulled downward into the 4D Firmus. Matter only slopes around a curve based on its momentum. If there is no immediate curve, then matter far away has no effect. As in Alpha Centauri (4 light years away) is not subtly pulling on our sun because of the taut Firmus between the two.

Likewise a super massive black hole does not have any pull on our sun. It's too far away for its immediate gravity well to affect us directly.

However it does indirectly affect us:

In a seemingly unrelated note, astronomers have observed that the Hubble Constant, which is the rate at which light red shifts over time varies depending on how far away they look. In the immediate vicinity of the Milky Way, they calculate the constant as about 73, while further out past our own galaxy they say it normalizes to about 67.

If we remember back to the description of black holes under the Quantum Time theory, the daisalts are created and propagate outwards in a Firmus current, then displace equally outwards in all directions underneath galaxies (along an XYZ space parallel to ours), and then eventually displace upwards (into our XYZ) on the rim of the galaxy.

This creates a subtle displacement mound all around a galaxy, with the supermassive black hole at the center.

This means all galaxies have a subtle bulge to the underlying Firmus, starting at the edge of the galaxy and sloping inwards to the super massive black hole.

It would look just like a gravitational distortion of a halo.

1. The Real Shape of the Canvas (The Trumpet Bell)

If you push a tent pole up into a tense canvas, it doesn't actually form a perfectly straight V-shape (a cone). To make a straight cone, the canvas would have to stretch unevenly.

Because the Firmus is trying to minimize its energy and distribute the tension perfectly evenly, the natural geometric shape it takes is a Logarithmic Curve. It looks like the flared bell of a trumpet, pointed down into the black hole.

The answer comes straight from structural engineering and fluid dynamics. It is all about Surface Tension and Energy Minimization.

When you calculate the mathematical shape of a tensioned membrane minimizing its energy

around a central load (governed by the Laplace equation for a membrane), the physical geometry it inherently creates is a natural logarithmic curve ($\ln(r)$).

2. The Derivative is the Slope

This is where the physical geometry perfectly creates the $1/r$ math we need.

The heavy load of the galaxy pushes and pulls the 3D membrane down.

To keep from tearing, the surface tension distributes the load, physically bending the Firmus into the most stable shape possible: The Logarithmic Funnel.

In calculus, the exact derivative (the slope) of a logarithmic curve ($\ln(r)$) is exactly $1/r$.

Near the center pole (the black hole), the slope is incredibly steep. As you move outward, the slope smoothly and gently tapers off.

3. The Velodrome Math (The Magic Trick)

Remember our Mini golf course? The speed an RC car needs to go to not slide down the bank depends on two things: the steepness of the slope, and how wide the circular track is (the radius).

Wider track (larger radius): You need more speed to stay banked.

Steeper slope: You need more speed to stay banked.

Now, look at the Firmus displacement mound: because the mound is a natural logarithmic curve, the steepness of the slope drops off at an exact, specific mathematical rate: $1/r$.

If a star moves twice as far away from the center:

The track is twice as wide (demanding more speed).

But the Firmus slope is exactly half as steep (demanding less speed).

4. The Perfect Cancellation (The Flat Curve)

When you put those two rules together in the Velodrome, they perfectly cancel each other out. The radius of the galaxy completely vanishes from the math. The speed required to balance on the Firmus slope becomes a single, constant number, no matter where you are on the curve.

A star 10,000 lightyears out sits on a steep slope, but a tight track. Required speed: 220 km/s.

A star 50,000 lightyears out sits on a shallow slope, but a massive track. Required speed: 220

km/s.

Standard science looks at this and says, "The velocity is flat! The outer stars must have invisible Dark Matter pulling on them so they don't fly away!"

We now say: "No. The outer stars are traveling at 220 km/s because that is the exact, unchangeable speed limit dictated by the natural logarithmic tension of a displaced Firmus floorboard."

It doesn't just hold up. It generates the exact equation.

The Firmus Tension: The rigid daisalts displace just enough to distribute the stress of the galaxy, forming a natural logarithmic trumpet-bell curve.

The Perfect Balance: Because the slope tapers off exactly as the track gets wider, the required orbital speed mathematically locks into a single constant velocity.

No Dark Matter Required: The "flat rotation curve" is just the natural geometric signature of a solid-state material under tension.

Because the funnel is logarithmic, its slope is automatically $1/r$.

Because the slope is $1/r$, the centrifugal force of the orbiting stars perfectly cancels the radius out of the equation ($v^2/r = 1/r$).

Because the radius cancels out, every single star in the galaxy travels at the exact same constant speed ($v = \text{constant}$), completely solving Vera Rubin's Dark Matter paradox.

Part 4: Black Holes Are Upside Down Hawaii

In the center of the massive Pacific Ocean, Hawaii is a chain of islands that seemingly appear out of nowhere. However geologists know that a "hotspot" at the center of the crust of the Pacific Ocean causes the crust to invert upwards (relative to us.)

Now the interesting thing here is that the hotspot gradually moves, but the landmasses it formed didn't immediately fade away. The older islands are subject to erosion into the sea, and will eventually be reclaimed.

Let's now juxtapose this with black holes:

Plastic deformation (a temporary divot) vs. plastic deformation (a permanent displacement mound).

1. The Hotspot (Why speed matters)

In this model, we built the Firmus as a solid-state quantized ball pit colloid (essentially) that can be displaced and flow under pressure (like the Earth's mantle). This process is called creep.

The Fast Divot (A moving star): If a single star is flying through the void, it is driving its tethers down into the Firmus. But because it is moving so fast, it just creates a temporary, rolling divot. The Firmus stretches elastically, lets the star pass, and snaps back to flat. The star moves too quickly for the deep, underlying 4D lattice to massively flow out of the way and create a macroscopic retaining wall.

The Static Hotspot (A Galaxy Core): A supermassive black hole and its surrounding billions of stars sit in the exact same spot relative to the Firmus for billions of years. That localized, sustained, catastrophic downward pressure forces the solid-state Firmus to flow and permanently deform. The Daisalts displace outward, creating the massive, static Displacement Mound.

2. Where do we see them? (The Misinterpretations)

Standard physics sees Firmus mounds all the time. But because they don't believe the vacuum of space has a physical structure, they misinterpret the mounds as "Dark Matter Halos." Here are the two biggest places we actively see displacement mounds in telescope data:

Misinterpretation A: Gravitational Lensing

When astronomers look at a distant galaxy, the light from galaxies behind it gets warped and magnified in a massive circle around the edges.

Standard Physics: "There is an invisible halo of Dark Matter surrounding the galaxy, and its gravity is bending the light."

Quantum Time Engine: "You are literally looking directly at the Firmus Displacement Mound." Remember how the mound is under intense structural stress, changing its refractive index (the Hubble Tension)? When light from a background galaxy hits that highly stressed, sloped Firmus glass, it physically refracts. It bends like light moving through a magnifying glass. We don't see Dark Matter; we are seeing the optical distortion of the Firmus grade!

Misinterpretation B: The Bullet Cluster

Two massive galaxies crashed into each other, and when astronomers look at it, they see that the visible matter (the glowing gas) crashed and slowed down. But the "Dark Matter" (measured by where the light is lensing) kept going and separated from the visible matter!

Standard physics says: "Aha! Dark Matter must be a separate ghost particle that doesn't feel friction!"

The Firmus engine solves this instantly without ghost particles: The galaxies are sitting inside massive Firmus Displacement Mounds.

The two galaxies collide. The Daions (matter) smash into each other, create massive friction, and slow down.

But the Mounds are physical, structural waves in the 4D daisalts! When the matter stops, that massive, built-up topographical wave of displaced Firmus keeps rolling forward under its own momentum, like the older islands drifting past the hot spot, or like two tsunamis crashing into and past each other, and leaving hapless boats behind in the aftermath.

The light lenses around the moving wave, not the stopped matter!

This explains why the distorted Space-Warp (the mound) can physically separate from the matter (the galaxy) during a high-speed collision like the Bullet Cluster.

Part 5: The Illusion of c and the Temperature of the Bubble Zone

Because a light wave has no clock, it has no perspective. It is energy transferring laterally at the maximum shear limit of the daisalts.

Who is the one obsessed with the speed of c ? We are.

We say it's that fast because that's what our clocks say it goes.

We are the ones made of gyroscopes. We are sitting in a gravity well, our gyroscopes are lagging under the P-wave compression, and we are using our sluggish, localized clocks to measure a pure kinetic ripple. We measure its speed as c , but that speed is just a reflection of our own mechanical limits, not an intrinsic property of the wave's "experience."

When we say light takes eight minutes to travel to us from the sun, what we should really say is that our time clocks take eight minutes to register that light instantaneously traveled to our eyes.

So here's a thought: if it's an earthquake, then the intensity of the light totally depends on where you stand. If you stand right near the epicenter, then you get one Richter Scale reading, if you stand further away, you get another lesser reading, etc.

The same goes for light: if you stand right next to it, you get a gamma ray burst, if you stand

further away you get whatever floats your boat, all the way down to microwaves and then radio waves.

This implies that light has a maximum distance, as predicted by Coulomb as well, and that would be $1/r^2$.

So once we looked out past a certain point, we would see microwaves. As in the Cosmic Background Radiation.

Yes but why is the temperature of the CMB the same everywhere we look, out past what we can see with infrared light?

Here's a fun fact: Light does not have a temperature.

When standard physicists convert a light wave's frequency into a "temperature," they use a specific piece of blackbody math called Wien's Displacement Law.

The equation is incredibly simple: Temperature = a constant number / Wavelength.

This means that as the wave just gets longer, the "temperature" gets colder. That's it. It's a perfectly smooth sliding scale.

When the wave is short they think it came from something 6,000 Kelvin (Visible Light from the Sun).

When the wave is roughly 1 millimeter long at 2.7 Kelvin (Microwaves - the CMB).

So they aren't measuring temperature with the CMB, they are measuring microwaves.

If they use this equation to measure the "temperature" of the CMB, do they use it on regular, visible stars, and does it actually work when things get really far away?

The answer is yes, they do use it on visible stars. But for things that are really far away, the raw equation completely fails, and standard physicists have to mathematically "fix" it.

Here is exactly how they use it, how it breaks over distance, and how it completely validates the "Tired Light" model:

1. The Local Baseline (The Color of Heat)

For stars that are relatively close to us, the blackbody equation works perfectly.

Because a star is a massive, physical object (trillions of vibrating Daion pegs), its kinetic friction creates a literal temperature. The hotter the star, the tighter and more energetic the light wave

it emits.

A "cool" star emits longer, lazier waves (Red light).

A "hot" star emits tighter, faster waves (Blue light).

If they point a telescope at a local star and measure the exact wavelength of the light, they can plug it into the blackbody equation, and it correctly tells them the exact surface temperature of the star.

2. The Distance Problem (The Broken Thermometer)

But what happens when they look at a star that is billions of light-years away?

As that light travels across the hypercolloid, it loses energy and stretches out (redshift). What started as a tight blue wave from a violently hot star stretches out until it becomes a lazy red wave, or even drops into invisible infrared.

If an astronomer takes that exhausted, stretched-out wave hitting the telescope and blindly plugs it into the blackbody equation, the math spits out a completely wrong answer. The equation will look at the long wave and say, "This object is freezing cold," even though the actual star that emitted it is burning at 20,000 degrees.

The distance broke the blackbody thermometer.

3. The "Barcode" Fix

So, how do they figure out the true temperature of a distant galaxy? They completely ignore the raw blackbody equation and look for the engine's "barcode."

When light passes through hydrogen or helium in the star's atmosphere, those elements absorb very specific frequencies of light, leaving black lines in the spectrum. Those lines are a universal barcode.

When astronomers look at a distant galaxy, they see that the entire barcode has been physically slid down the scale toward the red end.

They use the barcode to measure exactly how much the wave stretched out during the journey. They calculate the exact amount of "Tired Light" friction, mathematically shrink the wave back to its original size, and then run the corrected wave through the blackbody equation to find the star's real temperature.

4. The Glaring Contradiction

When physicists look at a distant galaxy, they freely admit: "This light got tired and stretched out over distance. We can't trust the arriving wavelength to tell us the temperature, because the wave has been stretched by the journey."

But when they look at the Cosmic Microwave Background...then they suddenly forget to apply the rules now?

They point their satellite at the deep void, catch a massively stretched-out 1-millimeter microwave, plug it raw into the blackbody equation, and declare: "The universe is 2.7 Kelvin!"

Why didn't they assume that this microwave is just the exact same thing as the distant galaxy—light from an impossibly distant source that just kept stretching and stretching until it hit the 1-millimeter mark?

Because they wanted a Big Bang. They needed a cosmic baseline temperature to prove their explosion, so they treated the stretched-out microwave as a literal temperature instead of what it obviously is: the ultimate endpoint of Tired Light.

Standard physics already knows that distance breaks the blackbody temperature equation. They have to actively correct for the wave stretching every time they look at a distant star.

I am just taking their own logic and carrying it to the absolute horizon.

The CMB isn't a 2.7K temperature reading of empty space. It is just the ambient glow of light from sources so impossibly far away that the wave stretched completely off the visible barcode and into the microwave static.

And I am saying the microwave is just a microwave.

Even more interesting is that when the Planck satellite mapped the CMB, it didn't find a perfectly smooth, uniform blanket of microwaves.

It found a "mottled" pattern. The map is covered in microscopic variations—tiny "warm spots" and tiny "cold spots" mixed together like television static. Standard physicists call these "anisotropies."

I call them galaxies redshifted to microwaves, and empty spaces with no galaxies.

If you can imagine a tsunami wave, if you stand close to it, it is the most powerful with constructive interference.

The further you go away from it, eventually it will be the least powerful with deconstructive interference.

The same thing goes for a wave washing up on a beach losing coherence, the white noise of a crowd in the distance, or a sphere of light waves coming at us red shifted to the point of decoherence.

Boss Fight: Why Light Is An Unreliable Narrator

I have a question about the most advanced observational limits in all of astrophysics:

Do we ever see partial redshift barcodes?

The answer is yes, we absolutely see partial barcodes. In fact, for the furthest objects in the universe, the left half of the barcode is completely wiped clean off the scanner. The scientific community literally calls these objects "Dropouts."

Here is exactly what happens to the barcode when light has to travel that insanely far:

1. The Scratched Barcode (The Lyman-Alpha Forest)

Imagine you print a perfect barcode on a package and ship it across the country, but the delivery truck drags the package behind it on a rope.

Space is not perfectly empty. It is filled with incredibly thin clouds of hydrogen gas.

When a distant galaxy shines its light, it starts with a perfect, complete barcode. But as that wave travels across the universe, it has to plow through thousands of these hydrogen clouds.

So, it hits the first cloud, and the cloud absorbs a specific frequency, drawing a black line on the barcode.

Here is the mechanical catch: Because of the Hubble Constant friction, the wave is constantly stretching as it travels.

It hits the second cloud. This cloud absorbs that exact same frequency, but because the wave has stretched, the black line is drawn on a different part of the barcode.

By the time the light reaches us, the barcode is covered in hundreds of random black scratches. Astronomers call this the "Lyman-Alpha Forest." It is the physical, structural record of the wave getting chewed up by the environment while simultaneously stretching out.

Then the wave travels, it gets tired, and stretches.

2. The Half-Printed Barcode (The Gunn-Peterson Trough)

Now, let's look at the absolute furthest things we can possibly see—the edge of the headlights.

When you look back that far, the light isn't just hitting a few clouds. It is plowing through a massive, dense fog of neutral hydrogen.

The high-energy, tightly wound part of the wave (the blue/UV side of the barcode) gets completely absorbed and shredded by this thick fog. The kinetic friction is just too high; those tight waves cannot penetrate the gas.

Only the low-energy, stretched-out part of the wave (the red/infrared side) has the structural capability to slip through the fog and survive the journey.

When astronomers catch this light, the barcode is literally cut in half. The entire blue side is a flat, dead zero. Astronomers call this the Gunn-Peterson Trough, and they call the galaxies "Lyman-Break Galaxies" or "Dropouts" because they literally drop off the visible spectrum. You can see them with an infrared camera, but if you look with a normal optical telescope, they are completely invisible.

3. What This Means for this Model

This is the ultimate proof that light is not just magically gliding through an empty, expanding void. It is physically interacting with the road.

Standard physics tries to explain this by saying the universe used to be smaller and filled with dense gas, and then it expanded.

But we can explain it much more simply:

The Road is Dirty: The hypercolloid floorboards have dust (hydrogen) on them.

The Friction is Real: The further a wave has to travel, the more it gets scratched up by the dust (the Forest).

The Structural Limit: If a wave comes from too far away, the tight, high-frequency half of the wave gets completely destroyed by the physical drag of the gas. Only the long, lazy red waves survive the trip to hit our satellite dish.

We asked if we ever see partial barcodes.

Not only do we see them, but the way they are broken perfectly maps the physical friction of the space they traveled through.

The furthest things we can see are quite literally half-destroyed, exhausted red waves that barely survived the journey. If they were any further away, the red half of the barcode would stretch down into microwaves (the CMB), and then stretch into radio waves and disappear into our local noise floor.

The Cosmic Background Radiation is not cosmic or background. It is microwaves at the edge of our vision. The temperature is an inference by current science, not an empirical fact.

And all the light from all the stars that doesn't hit something, where does that energy go?

In an earthquake, the force of the wave is distributed all along the ground until it dissipates entirely and the absorption equals zero.

The same thing happens to light as the Firmus absorbs the wave along the entire distance of the energy emitted.

Instantaneously.

Part 6: Instantaneous Really Means Instantaneous, Stop Pretending Light Travels

I really need to be explicit, because I use the word "travels" too, and it's a linguistic nightmare to explain light: the image of light as a causal baseball is so ingrained in us:

If light has no time clock, then it cannot experience travel time. Period. Therefore, the physical transaction between the Sun emitting the wave and your eye absorbing the wave is exactly one single event. The connection is instantaneous. For real.

With Quantum Time we have to completely redefine what the speed of light actually is.

1. The Zero Interval (The Light's Perspective)

In standard physics math (Minkowski spacetime), the "distance" a photon travels through spacetime is always exactly zero. Emission and absorption are adjacent points.

In Quantum Time, this is purely mechanical. The S-wave has no gyroscope. It is just raw kinetic energy transferring across the rigid hyperspheres. When a Daion on the Sun wobbles and plucks the Firmus, that kinetic wave snaps across 93 million miles of floorboards without a single "tick" of a clock.

The kinetic transfer from the Sun's tether to your eye's tether happens in a single, un-clocked mechanical transaction. To the universe, it is instantaneous.

2. The Time Tax (The Observer's Perspective)

So where do the 8 minutes come from?

The Time Tax is paid entirely by the receiver.

We are the ones made of matter. We are the ones sitting at the bottom of a gravity well, packed full of sluggish, spinning gyroscopes.

When that instantaneous transaction hits our local Daisalt floorboards, our matter has to physically process the energy transfer. But because our gyroscopes are dragging, our local frame rate is incredibly slow.

It takes our Earth-bound gyroscopes 8 minutes of physical ticking to process the spatial geometry (the 93 million miles of Daisalts) that the S-wave just bridged instantaneously.

We aren't waiting 8 minutes for the light to cross space. The light already did it. We are just sitting there, mechanically lagging, waiting for our own internal clocks to catch up to the transaction!

3. Redefining c (The Conversion Rate)

This completely changes what c is.

If the transaction is instantaneous, then c (\$299,792,458 meters per second) isn't the "speed limit of the universe."

c is simply the mechanical lag rate of matter.

It is the strict mathematical conversion rate between the physical distance of the rigid hyperspheres and the processing speed of a Daion's gyroscope.

When we measure the "speed of light," we are literally just measuring our own structural processing delay. We are measuring how long it takes our own matter to pay the Time Tax for observing a distant event.

4. The Ledger Balances

The Sun's Transaction: The S-wave snaps across the grid. Time elapsed = 0.

The Energy Tax (Redshift): Because the transaction crossed 93 million miles of rigid hyperspheres, the transaction mathematically bleeds a fraction of its energy into the W-axis. The light arrives slightly redder.

The Time Tax (Dilation): The observer's gyroscopes lag behind the transaction. The observer physically ages 8 minutes to balance the spatial ledger.

Both currencies are paid, but they are paid by two different participants in the transaction. The wave pays the Energy; the observer pays the Time.

The Three Equation States:

1. Pure Causal Equations (Clock ON \rightarrow Clock ON)

Matter interacting with Matter.

These are the equations that govern the Bubble Zone. This is standard thermodynamics, classical mechanics, and chemistry.

The Rule: Both interacting objects have actively spinning gyroscopes. They both experience processing lag. Therefore, there is a strict sequence of events (A happens, then B happens).

The Examples: A Daion of carbon reacting with oxygen to make fire. Two cars crashing. A star burning its fuel.

The Math: Time (t) is a mandatory variable in these equations. The arrow of time strictly points forward because the gyroscopes are ticking.

2. Pure Bicausal Equations (Clock OFF \leftrightarrow Clock OFF)

The Firmus balances its own geometry.

These are the equations that govern the Firmus and the transmission of energy across the 4D lattice.

The Rule: No active gyroscopes are involved in the transmission medium. Zero processing lag. The start and the finish of the transaction are mathematically locked together in instantaneous geometric equivalence.

The Examples: * Light (S-waves): The kinetic snap of energy across the solid-state Firmus lattice.

Quantum Entanglement (P-waves): Two particles sharing a direct downward structural tether through the hyper-colloid. Flipping one instantly flips the other because the tether itself is bicausal.

The Firmus Current: Inert Daisalts flowing underneath the galaxy after being crushed by a black hole.

The Math: Time (t) is completely stripped from these equations. The math is perfectly reversible (bicausal) because it only cares about structural tension (c^2) and geometry.

3. Bicausal + Causal Equations (The Interface)

This is the math of the intersection—where the ticking Bubble Zone crashes into the timeless Firmus.

The Rule: A localized object with a spinning gyroscope (Clock ON) interacts directly with the timeless hyper-colloid floorboards (Clock OFF).

The Examples: * Gravity: A causal Daion pushes its vitrium tether into the bicausal Firmus. The Firmus immediately pushes back with c^2 buoyant tension, causing the macroscopic divot we call a gravity well.

The Black Hole Yield: Extreme causal mass forces the bicausal Firmus lattice to shatter and flow like a non-Newtonian fluid.

The Hubble Tension: Causal light emitters shining through a bicausal Firmus hypercolloid that has been structurally stressed changing its optical refractive index.

The Math: These equations contain a Time variable for the Daion's side of the equation, but a strict Identity/Equivalence variable for the Firmus's reaction.

Standard physics has spent a century trying to force Pure Causal math (General Relativity) to play nice with Pure Bicausal math (Quantum Mechanics) without understanding why they clash. They clash because one has a ticking clock and the other doesn't!

Part 7: Sprinting and Dancing are Both Distance

If time dilation is simply the mechanical cost of a Daion dragging its ticking gyroscope across the 1-Planck-length Firmus floorboards, then the universe doesn't care about your destination. It only cares about the total distance your particle scrubbed against the 4D glass.

We know macroscopic velocity causes time dilation. If you fly a spaceship in a straight line at 99% the speed of light, your Daions are dragging across trillions of miles of Firmus. Your internal gyroscopes slow down to pay the massive friction toll, and you experience time dilation.

But what if you don't go anywhere? What if you lock that Daion in a box and crank the temperature up to a million degrees?

Heat is just kinetic vibration. That microscopic particle is now violently vibrating back and forth inside its box trillions of times a second. It hasn't moved an inch in the 3D world, but down on the 4D Firmus, it is scrubbing back and forth across the glass just as frantically as the spaceship.

A mile driven in a straight line, and a mile driven back and forth in your driveway, both put exactly one mile on the car's odometer.

Therefore, with Quantum Time, Heat and Macroscopic Velocity must be the exact same currency. They both spin the odometer, they both demand a toll, and they both must inherently cause Time Dilation.

The Challenge: I have built the physical, mechanical engine that unites Special Relativity and Thermodynamics under a single friction toll. But the exact conversion rate—the mathematical gear ratio between the temperature of a vibrating Daion and the resulting dilation of its internal time clock—is a calculation I leave to the rigorous mathematicians. (See appendix.)

Boss Fight: Faster Than Light P Waves And Daions As Objects Were Already Predicted

Paul Dirac and Richard Feynman each in turn realized the 3D map was fundamentally broken, but science refused to admit it.

When they tried to combine Relativity (speed limits) with Quantum Mechanics (atoms) the math figuratively exploded.

They were accidentally predicting two different things, but because they didn't have this model, they thought their equations were broken.

1. The Element 137 Paradox

When Paul Dirac wrote the math for how an electron behaves near a nucleus using relativity, he ran into a massive wall that standard physics still calls the Dirac Equation Crisis or the problem of Feynmanium (Element 137).

If you have a really heavy atom (with 137 protons), the "pull" of the nucleus is so astronomically strong that for the electron to stay in its valence shell, Dirac's math dictates it must travel faster than the speed of light ($>c$).

Standard physicists panicked. They said, "Nothing can go faster than light! The math must break down here!"

2. Bicausal P Waves Happen Instantaneously

There is one thing I need to make explicit about Daions and their P waves:

Daions are causal, and definitely do not travel at the speed of light. They travel at speeds that we can understand because they have time clocks.

P waves are bicausal and instantaneous, and from our perspective are faster than the speed of light.

Therefore, all bonds and fields: quantum, atomic, molecular, magnets, whatever floats your boat, the bicausal math happens, the bond is formed or broken, and then the causal daion is time dilated along for the ride.

Standard physics calculated this and concocted virtual photons that would be generating these fields, and the obvious problem is that light would be emitted with every bond in the universe, every magnet, what have you, and since we don't see that, that doesn't really make sense mechanically.

However, with P waves it does because inherently they lack the destructive capabilities of light, and they are undetectable by light, which is a good giveaway that light must be slower than something we can't detect with it.

3. The Infinity Crisis

Arguably the most famous cover-up in modern physics is when the math went overboard on the energy.

When Richard Feynman and others tried to calculate the actual energy of a single electron interacting with its own electromagnetic field (Quantum Electrodynamics), the math didn't just get big. It shot straight to Infinity.

The formula for calculating the electromagnetic self-energy of a particle requires dividing by its radius ($1/r$). Because standard physics assumes the electron is a 0D point particle, its radius is exactly zero. Dividing by zero equals infinity.

They couldn't have infinite energy in a single atom, so they invented a mathematical hack called Renormalization. They literally just subtracted the infinities out of the equations to make the answers look normal.

Feynman famously hated this. He called his own Nobel Prize-winning math "hocus-pocus" and a "dippy process" because he knew they were just sweeping the real mechanics under the rug.

4. The Divide-by-Zero Error

The Daion at the center of an electron is a spinning 4D hypersphere enclosed in a physical

Vitrium shell. It has a physical, structural volume. It has a radius. Because the radius is not zero, you never divide by zero. The math never hits infinity. By simply giving the particle a physical body, we cure the math of its infinite singularity.

5. It's Not Anyone's Fault, It's Everyone's Fault

Dirac and Feynman are not at fault here. To be fair, they knew something was suspicious, and had to go with whatever worked at the time.

It's not the fault of science or scientists. Causal thinking is absolutely the scientific method. You predict, then you observe, then you repeat, which implies time is passing.

To do science, you have to be causal, which means you have to be made of matter.

Hence Bubble Bias.

However, now the jig is up. With this model, we see you, Universe. We know how you work as a mechanical object just a little bit better, and maybe one day we will truly understand your bicausal language.

Boss Fight: Quantum Entanglement of Particles

So now you know how light works because it is always a bicausal wave, it shouldn't surprise us to note that light and daions behave differently when quantum entangled.

So much so that I would say that it's not really the same phenomenon.

Let's describe each in turn:

1. Light

Standard physics has successfully entangled photons over massive distances. (In 2017, the Chinese satellite Micius successfully beamed entangled photons from orbit to two ground stations 1,200 kilometers apart).

This Engine's Logic:

Light is a bicausal wave. It has no mass. It is a frictionless S wave across the surface of the Firmus. Because it has no physical daion or tether, it is therefore a geometry, and all instances along that equation of geometry must balance out.

2. Matter

When physicists entangle heavy particles (electrons, atoms), they can only do it at microscopically short ranges, and they have to put them in absurdly extreme environments—perfect vacuums cooled to a fraction of a degree above absolute zero.

This Engine's Logic:

When you entangle two heavy particles, you are stretching a physical tension line between two already entangled daions.

If anything else bumps into that line—a stray atom of air, a spike of ambient heat, a rogue vibration—the heavier geometry of the interfering object runs right over the string and physically severs the connection.

This is exactly what standard physics calls Quantum Decoherence.

I call it a tripwire.

If I were going to clean up the nomenclature, I would propose that light is bicausal by its very nature and daions can be quantum entangled (by a cold welded tether) which gives them the bicausal trait between each other.

However, it is important to note that due to the very nature of gravity being the quantum entanglement of a matter and antimatter pair tethered across the Firmus, all matter in our universe is already entangled, and thus adding a second tether creates a three body problem, which is mathematically chaotic.

Which is another way of saying three's a crowd.

Part 8: The Universal Clock in the Sky is the Same Thing as Celestial Spheres.

Before Einstein, physicists thought there was one giant, invisible clock in the sky, and the whole universe ticked perfectly to it.

Einstein proved that wasn't true. He proved that Time is relative. But standard science still treats Time as a magical "fabric" that bends and warps around objects.

Why?

There is no empirical evidence for the past or the future to exist somewhere “out there.” Yes, we can remember what happened (somewhat), and we can predict what will probably happen with startling accuracy.

Both of those capabilities exist solely within our brains. The past and future “exists” just as much as a unicorn “exists.”

This experience that we are having collectively is a live broadcast. No amount of wishing for a past that does not exist will cause it to suddenly exist. Science should not deal in wishes. Science is not a genie in a lamp.

Yes, humanity needs time in our lives on Earth because we collectively line up our quantum clocks to all point in the same direction, ticking at the same speed.

We live in the Bubble Zone. We will absolutely still need time with everything dealing with matter (which is us and pretty much everything on earth.). Do not throw your watches away and riot in the streets with signs that read, “Time Is An Illusion!” I guarantee you will still need to go to work on time tomorrow.

However, to treat the universe as being run by a universal clock is as backwards as sticking the earth in the center of the universe and contemplating paths of glass spheres in the sky to explain the movements of the planets.

(Could there be a greater irony than this? You know, saying standard physics is backwards while trying to propose tiny glass hyperspheres as the solution.)

The point still stands: There is no universal clock. There is no fabric of time. There are only trillions and trillions of independent, microscopic gyroscopes spinning inside their vitrium casings.

If a Daion is sitting in deep space, its gyroscope spins freely. Its clock ticks fast.

If a Daion is sitting on the surface of a neutron star, its gyroscope is bogging down under the extreme W-axis compression. Its clock ticks sluggishly.

Interaction is just translation.

With this model it's self-evident that every interaction with anything is relative.

When an S-wave (light) travels from that fast-ticking deep space Daion and hits the slow-ticking Daion on the neutron star, you have two machines operating at completely different frame rates trying to talk to each other.

The "Relativity" we observe in telescopes and particle colliders is just the mathematical

translation between two unsynchronized gyroscopes.

The slow Daion looks at the fast incoming wave and says, "Wow, that energy is incredibly high-frequency." (Blueshift)

The fast Daion looks at a wave coming from the slow Daion and says, "Wow, that energy is incredibly stretched out." (Redshift)

3. The Self-Evident Universe

When you make each Daion its own clock, the paradoxes vanish. You don't need to ask "whose time is the real time?" because none of them are. Everything—speed, mass, time, energy—is completely relative to how fast that specific Daion's internal gyroscope is spinning at that exact moment.

Part 9: Okay, I Get That, But Why Does Time Look Like An Axis To Us

The Illusion of Consensus:

The reason why time looks like an axis to us is because the closer you get to all of the time clocks ticking at the same speed, if you add the time vectors together it approximates a straight line.

It's only when the time vectors deviate from each other that the warp as an axis becomes apparent.

This is the exact mechanical reason why humanity has spent the last century thinking Time is a train track instead of a motor.

1. The Consensus of Clocks (Why it Looks Like an Axis)

Right now, here on Earth, you, me, the chair you are sitting in, and the trees outside are all experiencing the exact same baseline conditions.

We are all sitting at the same depth in the Earth's gravity well (the Warp axis).

We are all moving on the Firmus at roughly the same speed (orbiting the sun).

Because our physical environment is identical, every single Daion in our bodies is grinding against the Daisalts at the exact same RPM. Our internal motors are all perfectly synced up.

If you take a trillion tiny localized "time vectors" (the quantum coalescence of each individual Daion) and add them all together, the mathematical average creates a massive, singular, uniform line.

To a person made up of bubbles skating on the ice, this consensus of identical time clocks looks like a universal "Time Axis." We mistake the shared RPM of our local engines for a master clock on the wall.

2. The Vector Overlap

Because we are resting on the Firmus, the direction our motors are working against is governed by the structural bend of the floorboards.

The Warp Vector is the physical sag of the floorboards (Gravity).

The Time Vector is the friction of our engines holding us there.

Because we are all clumped together in the exact same spot on the floorboards, our collective Time Vector perfectly overlaps the Warp Vector. They cast the exact same shadow. Standard physics looks at that single shadow and calls it "Spacetime," assuming they are permanently woven together into one 4D axis.

3. The Illusion Breaks (The Relativistic Split)

How do you prove they are separate things? You have to break the consensus.

This is what Einstein proved with Special and General Relativity, even though he didn't have this mechanical blueprint to explain why it was happening:

The High-Speed Split: If you put a man in a rocket and shoot him near the speed of light, his Daions hit massive drag against the Firmus. His motor bogs down. His local time slows down. His "Time Vector" completely deviates from the people still on Earth.

The High-Gravity Split: If you put a man near a Black Hole, the Firmus is compressed into the Warp axis. It is vastly harder for his Daions to spin against the sloped Firmus floor. His motor bogs down because he's driving on the side of a hill. His local time slows down.

4. Don't Throw Your Space-time Maps Away: That means for most purposes in our 3D space, time as an axis is pretty freaking amazing for predicting the future, or remembering the past. We as humans will continue to need Spacetime as a map of the 3D surface. That's really what it is:

A 2D map of anywhere on Earth is super awesome if you happen to be on Earth and there are these little lines that show the altitude of mountains (or oceans if you happen to be driving a submarine).

The map of Spacetime is an approximation of the surface of the Firmus, with suns and black holes and such being the altitude lines, and us understanding how we can predict where and when things will be with regards to time, which is why it's been useful to us, as beings forged with time clocks.

Chapter Boss Fight: Why Matter Can't Go The Speed Of Light, Mechanically

We all know that matter can't go the speed of light. Einstein proved it, we know it. This is old news.

Okay but do we know why? As in the how it all adds up why?

Absolutely! It's because you would need all of the energy in the universe because the equations say so.

Okay but why do the equations say that?

See that's what I'm getting at. I'm asking, why mechanically can matter not go the speed of light? What's stopping it from doing that? Because it has mass? What the heck is that?

Really this whole book has been a culmination of understanding why the equations add up the way they do mechanically.

And we needed all of the ideas previously to understand why, really, for like really really (can't I be serious for once, this is a super serious moment and I'm ruining it, what the hell, why am I so weird?):

First off, a daion is a 4D hypersphere made out of vitrium that contains a small amount of aether and vacuum to make a pressure differential gyroscope that can spin or not spin depending on whether it's a perfect daisalt or whatever, okay we get that.

Let's look at the vitrium casing though, isn't it made out of vitrium? Didn't we say that temperature is just vibration, and if the daion has any temperature, then therefore this vibration must be occurring, which is Heisenberg's Zitterbewegung. (I expect everyone to memorize this word, it's amazing.)

And we already said that light is a vibration on the floor through the daisalts at a minimum and maximum of the speed of light, through the vitrium casings.

Therefore because the casing of a daion is made of vitrium, as long as it's vibrating (which is all the time if it's matter), then the vibrating must always be at the speed of light. I'm going to say that again for posterity.

Matter is always already vibrating at the speed of light.

Therefore if you try to make it go the speed of light, that would be speed of light times speed of light, which is the point where the matter goes kablooeey, as in catastrophic mechanical failure.

Chapter Six: The Bicausal Now

Part 1: A Grand Unified Theory

The known universe is two four-dimensional regions: one is a vacuum known as the Void and the other known as the Firmus which is a plenum hypercolloid made of the superfluid Aether super saturated with inert vitrium hypersphere partners known as Daisalts. Our three dimensional space is the intersection of the two regions, in which the vacuum pressurizes the imperfect hyperspheres while they pull on their quantum entangled partners across the plenum and this is the twofold tension that bends the Firmus into the geometry of Gravity. The vibrations akin to earthquakes in the hypercolloid are the primary waves of the other known forces such as the nuclear, strong, weak, electromagnetism, and the field of chemistry, and the secondary waves are light.

Here is the comprehensive list of the forces unified and the paradoxes solved by Quantum Time:

Cosmology (The Macro Universe)

1. The Three-Body Problem

The Paradox: Standard physics cannot mathematically calculate the orbit of three gravity wells without the math descending into unpredictable chaos.

The Quantum Time Solution: The universe physically lacks the tricausal 2D sheets required to process $x=y=z$. It is forced to rapidly stutter between 1D bicausal tethers, resulting in

mechanical chaos.

2. The Vacuum Catastrophe (The 10^{120} Error)

The Paradox: Quantum math says the empty vacuum should contain an astronomical amount of energy, but astrophysicists measure almost zero, leaving a 10^{120} discrepancy.

The Quantum Time Solution: The energy isn't missing. It is the external Void Pressure (P_{void}) pushing down on the 3D crust, which is perfectly masked by the upward Archimedes buoyancy of the Aether in hydrostatic equilibrium.

3. The Hierarchy Problem

The Paradox: Gravity is 10^{40} times weaker than electromagnetism at the quantum level, yet somehow dominates the macro-universe.

The Quantum Time Solution: The Braided Cable. A single Daion tether is a hyperelastic band with slack, exerting almost zero downward tension. But a star is a "tower of marbles" that weaves trillions of tethers into a massive braided cable and warps the hypercolloid into an increasing slope with the downward pressure of the vacuum, and the localized elastic tension.

4. Baryon Asymmetry (The Missing Antimatter)

The Paradox: The Big Bang/Black Holes should forge 50% matter and 50% antimatter, but our universe is almost entirely matter.

The Quantum Time Solution: The Archimedes Screw. The macroscopic current of a spinning galaxy physically centrifuges the reverse-threaded antimatter Daions straight down the W-axis and into the basement, safely isolating them on the other side of the Firmus.

5. The Expanding Universe (Dark Energy)

The Paradox: Distant galaxies are redshifted, so physicists assumed the fabric of space must be stretching apart faster than light.

The Quantum Time Solution: Redshift is the geometric Refraction (the Beer-Lambert Law) of an S-wave paying a kinetic energy toll as it drags across billions of lightyears of 1-Planck-length hyperspheres. The Hubble Constant is the Extinction Coefficient of the Firmus.

6. Dark Matter

The Paradox: Galaxies have more gravity than visible mass, so physicists invented an undetectable ghost particle to balance the math.

The Quantum Time Solution: Galaxies are hemmed in by displaced Firmus that has bulged up into a halo, as seen in the Hubble Tension and “dark matter” halos.

7. The Cosmic Microwave Background (CMB)

The Paradox: A uniform 2.7 Kelvin microwave glow fills the universe, assumed to be the afterglow of the Big Bang.

The Quantum Time Solution: Light is an earthquake in the Firmus that red shifts as per Coulomb's Law into the microwave spectrum. Light does not have a temperature. Scientists use the blackbody conversion ratio on the furthest light they can see, but not on the microwaves as this would break the model of the big bang.

Quantum Mechanics (The Micro Universe)

8. Wave-Particle Duality

The Paradox: Light acts like a wave when it travels, but hits detectors like a solid particle (a photon).

The Quantum Time Solution: The Newton's Cradle mechanic. The S-wave travels seamlessly through the Daisalt floorboards as a wave, but when it reaches the final Daisalt at the detector, it transfers its kinetic energy as a single, discrete impact.

9. The Double-Slit Experiment & The Observer Effect

The Paradox: Particles magically split in half and interfere with themselves unless a conscious observer looks at them, which collapses the "probability cloud."

The Quantum Time Solution: The Breakwater mechanic. The S-wave physically splits at the slits and crashes into itself on the other side, creating bright and dark acoustic bands. The "Observer Effect" is just the physicist dropping a heavy 3D detector (a rubber mat) onto the floorboards, which physically absorbs the kinetic energy and ruins the delicate wave pattern.

10. Heisenberg's Uncertainty Principle

The Paradox: You can never know both the exact position and momentum of a particle simultaneously.

The Quantum Time Solution: Subatomic Relativity. We measure a jittering, time-dilating gyroscope (the Daion) using a strictly c-capped camera (the S-wave). The mismatched mechanical frame rates make it physically impossible to capture a sharp 1-Planck-length grid coordinate without blurring the momentum data.

11. Quantum Entanglement (Spooky Action)

The Paradox: Two particles (or photons) seem to communicate instantly across the universe, violating the speed of light.

The Quantum Time Solution: Daion entanglement is a bicausal vitrium connection communicating instantly through the W-axis geometry, completely bypassing the 3D surface speed limit. Light is always bicausal, as it lacks a quantum time clock.

12. The Infinity Crisis (Renormalization)

The Paradox: When calculating the energy of a single electron, Feynman's math shot to infinity, forcing physicists to artificially subtract the infinities out of the equations.

The Quantum Time Solution: A Daion is a hypersphere with a hypervolume, therefore we never divide by zero.

13. Element 137 (The Dirac Equation Crisis)

The Paradox: In super-heavy atoms, the math dictates that electrons must travel faster than the speed of light ($>c$) just to maintain their orbit.

The Quantum Time Solution: The Daion does not travel faster than light. The compressional 3D surface P-waves natively travel faster than the shear 3D surface S-waves (light).

Relativity & Time

14. Time Dilation

The Paradox: Time slows down for objects moving close to the speed of light or sitting in a heavy gravity well.

The Quantum Time Solution: Time is not a background dimension; it is the mechanical RPMs of the localized Daion gyroscopes. High speed or high gravity forces the tethers to drag hard against the Firmus, physically bogging down the internal gyroscopes and slowing the local frame rate.

15. The Twin Currencies of the Universal Toll

The Paradox: Light and matter behave differently across vast distances.

The Quantum Time Solution: Dragging across the rigid hyperspheres requires a kinetic payment. Matter has gyroscopes, so it pays the toll with a Time lag (Time Dilation). Light has no gyroscopes, so it pays the toll with an Energy bleed (Redshift).

16. Antimatter

The Paradox: Antimatter is identical to regular matter but mathematically behaves as though moving backward in time.

The Quantum Time Solution: The Left-Handed Screw. It isn't moving backward in time; its internal gyroscope is simply reverse-threaded. It drives forward into the W-axis exactly like regular matter, experiencing normal cause and effect, but its inverted spin annihilates normal matter upon contact (except for its daisalt partner.)

The Fundamental Forces & Constants

17. Unifying Gravity and Electromagnetism

The Paradox: General Relativity (Gravity) and the Standard Model (Electromagnetism/Light) refuse to work together in the same math equation.

The Quantum Time Solution: They are perpendicularly related. Gravity is the downward compression and thus geometry of the Firmus (onto W). It is physically driven by Void Pressure (P_{void}) pushing matter down, and the 1D quantum tethers pulling it down. Electromagnetism and Light are the lateral earthquakes.

18. The Speed of Light (c)

The Paradox: Nothing in the universe can move laterally faster than $299,792,458 \text{ m/s}$.

The Quantum Time Solution: c^2 is the Shear Modulus (the structural lateral failure limit) of the Daisalt surface.

19. Planck's Constant (h)

The Paradox: Energy is always emitted in discrete, quantized "chunks" rather than a smooth flow.

The Quantum Time Solution: Energy travels as a vibrational wave through the Firmus. Any wave traveling through it is physically restricted by the "grain" of that medium. Any empirical measurement we take must inherently be quantized, because you cannot measure a fraction of a mechanical structural interaction.

20. Mass and Inertia

The Paradox: Objects resist being pushed (Inertia), but standard physics doesn't know why mass has this property.

The Quantum Time Solution: Each Daion is a 4D gyroscope inside a vitrium shell. Inertia is the gyroscopic resistance to lateral movement.

21. The Strong Nuclear Force & Electron Shells

The Paradox: Protons should repel each other, and electrons should crash into the nucleus, but they don't.

The Quantum Time Solution: Acoustic Cymatics. Up daions have a pressure differential which causes a dipole intake effect, down daions don't. Protons are the strongest manifestation of this pressure differential (two up daions, one down), then scaling upwards as a hierarchical fractal to atoms, molecules, and larger structures. Electrons are trapped in the $2n^2$ harmonic acoustic dead zones.

22. Black Hole Formation (Geometric Non-Linearity)

The Paradox: Gravity seems to mysteriously compound and crush itself the denser it gets ("Gravity gravitates").

The Quantum Time Solution: The Snowball Effect. As the slope of the Firmus funnel gets steeper, the vertical resistance of the floorboards drops. This allows the tethers to pull even deeper, creating a runaway geometric collapse that ends in a perfectly perpendicular elevator shaft (the Event Horizon).

What else does this model solve or inform? Quite a lot actually. This is what happens when you fundamentally alter the rules of the game.

Part 2: Three Easy Ones

Paradox: Quantum Tunneling

How can electrons go through things?

A Daion is the size of a Planck length and the electron field is enormous compared to that. The field is not a billiard ball, it is literally a field of tiny earthquakes. That field is more or less shaped like a torus, which means you could conceivably have a revolving door effect in the planck length width of the warp. Each daion is a speck that's 16 decimal points smaller than the bicausal math surrounding it, which says, "nope daion, go this way."

So this is essentially like asking how a leaf can fit between two boulders on a river.

Paradox: Observer Wave Effect

How does an observer collapse a wave field into a particle?

It's an earthquake. No one is surprised when an earthquake travels like a wave in rocks but then you feel it in your feet as rocks.

Paradox: The Meissner Effect

At extremely cold temperatures (near absolute zero), why do certain metals suddenly lose 100% of their electrical resistance and begin to repel magnetic fields (the Meissner effect)?

You take a piece of special metal or ceramic (the superconductor) and place it on the table. You take a normal, everyday magnet and set it right on top of the metal. Nothing special happens. You take a thermos of liquid nitrogen and pour it over the metal, dropping its temperature down toward absolute zero. The magnet starts floating.

If you make the floor a chain link fence, then a hovercraft can't fly on it and will just sit there on the floor.

If you collapse the chain links until the floor is solid, suddenly the hovercraft will start floating.

Lowering the temperature of a metal collapses and condenses the P waves of the material, and the P waves of the magnet can no longer pass through the gaps, and instead push against a solid floor of P waves.

Part 3: Lightning is Bugs From Space (Figuratively!)

Let's try something a little more challenging, that uses multiple parts of the theory to explain something we all recognize, however is scientifically mysterious.

Meteorologists debate how lightning forms. The current theory that clouds rub against each other like balloon static cling does not measure enough juice to make lightning. You need about 3,000,000 Volts per meter to make lightning.

But when atmospheric physicists fly weather balloons and planes into the most violent thunderstorms on Earth, they measure the static charge. The electric fields in those clouds almost never exceed 300,000 Volts per meter.

Also, there's something called the Fair Weather Current.

If you take an electrostatic voltmeter outside on a perfectly clear, sunny day, you won't measure zero. You will measure a continuous, downward electric field of roughly 100 to 300 Volts per meter.

Hold that thought.

Back in 1958, the US launched the Explorer 1 satellite. It carried a Geiger counter, and it made a massive discovery: the Earth is surrounded by giant, donut-shaped rings of highly concentrated, trapped protons and electrons.

Standard physics calls these the Van Allen Belts.

We know for a fact that these particles didn't just drift there. Satellites have measured them sliding along the Earth's magnetic field lines. The 40,000 mile wide magnetic net literally reaches out, catches the fast-moving plasma from space, and traps it in these magnetic grooves, holding them in a massive holding tank right above the atmosphere.

Let's talk about cosmic rays for a second, because that too sounds like magic that we can explain mechanically.

In current science theory, all hydrogen has to be leftover from the big bang. You can't have it just popping up randomly, even though this means there's a struggle to explain how the earth is constantly being bombarded by these protons and electrons, and why clusters of hydrogen gas are randomly spread across the universe.

In this model however, protons and electrons pop up in our 3D space wherever the 4D Firmus current takes them.

That means if a brand new proton or electron pops up on a crash course with Earth, which by the way is not just standing still relative to the hapless particles, then it would look like a "cosmic ray" to us.

In this scenario, the protons and electrons are bugs, the Earth is a semi-truck, and our atmosphere is the windshield.

But let's keep going!

What if some (it doesn't have to be many!) of these protons and electrons seeped into the Earth's atmosphere through the funnels of the poles, and shot out on the underside of the magnetic field, like a giant atmospheric sprinkler.

Why don't the protons and electrons mix in the sprinkler?

A phenomenon called the Lorentz Force.

When charged particles hit a magnetic field, the field doesn't treat them equally. The magnetic field forces them to spiral in completely opposite directions. This means the 4D funnel isn't just a garbage chute—it is an active centrifuge.

So let's say protons and electrons rain on the earth, on a fair weather day, both the protons and electrons would fall relatively at the same rate. Which would describe the low voltage of the Fair Weather Current.

However on a cloudy day, electrons would float up above the clouds, while the heavier protons would fall to the ground. This is because protons are 1800 times heavier than an electron, so they would have the momentum to punch through any water vapor tension or updrafts, while electrons being much lighter would be caught in the net of the storm. Just like panning for gold, the clouds would be a sieve that would separate the lighter electrons from the heavier protons.

Some protons on the ground, some electrons in the sky, and instead of the normal explanation of positive and negative charge, I'm going to suggest a mechanical solution:

The protons having been separated from electrons by the magnetic field are now within a relatively short distance, stuck at the bottom of a gravity well, and in this model, they are tiny little dipole pirate vacuums, and they don't care who they grab, as long as they can get to a ballerina. They much much prefer ballerinas, but they will work together to build a chain of pirates reaching up out of the gravity well, one pirate at a time in the tiniest width pirate ladder.

I like to think of a proton as a tiny capital H, but I don't really want to specify an exact shape of a 3D segment of the larger 4D object, when I'm sure they have plenty of models out there. I'm just using the letter as a placeholder. In my mind it looks like this (turn the book counter clockwise):

HHHHHHHHHH

Their 4D P-wave dipole suction simultaneously grabs the ground and also reaches up the gravity well, and pulls down on the electrons in the sky.

Remember way back under P waves we talked about Constructive Interference?

That's the part about if you have two waves pushing in the exact same direction, their amplitudes physically stack.

So the electrons would be pulled into an alignment which looks like this:

.....

So together they would look like this, moments before the lightning strikes:

HHHHHHHHHHHH

Then once the P-wave bicausal math of a better configuration of 4D cymatics kicks in and an earthquake in the daisalts happens that links all of the electrons in the chain into a better configuration of all hydrogen atoms with all of the protons and electrons grouping up as perfect H₂ molecules, then the electrons would get shot down the magnetic train at the speed of a railgun, and what would be left for the smallest fraction of a millisecond would be:

Hydrogen plus a ton of friction in an atmosphere of Oxygen (and Nitrogen).

So like a line of the Hindenburgs positioned as a railgun in the sky.

We are talking about a pure kinetic energy train wreck railgun going at one third the speed of light, as measured by meteorologists.

Kinetic energy squares with velocity ($KE = 1/2mv^2$). If you take an entire column of electrons and accelerate it to 1/3 the speed of light, the amount of kinetic energy stored in that chain is unfathomable. When the protons touch the electrons, the column of matter combines in a line and ignites the stationary oxygen and nitrogen of the atmosphere, it doesn't just burn. It crashes. The kinetic friction and ram pressure of hitting the ground at relativistic speeds will instantly strip the electrons right off the air molecules, flash-converting the atmosphere into a superheated plasma. This is exactly how meteors burn up, but scaled to an unimaginable speed. You don't need a chemical fire to reach 50,000 degrees; the raw, violent kinetic dump of a relativistic train crash achieves that temperature effortlessly.

This line would send out an S wave of light along the entire length of the line.

Hidden from us would be the evidence of the real culprit since hydrogen and oxygen burn and just make trace amounts of water. The only things we would detect are the scorch marks of Nitric Oxide (NO), Nitrogen Dioxide (NO₂), and Ozone (O₃).

However the line of Hydrogen from the ground to the sky would be the spark plug.

The literal smoking gun of this model though is the order of events:

If you watch a slow-motion video of a lightning strike, you will see two things happen right before the main flash:

Faint, jagged lines of energy reach down from the cloud. (Standard physics calls this the "Stepped Leader"). This would be the electrons.

Faint, jagged lines of energy reach UP from the ground, specifically from tall objects like trees

and lightning rods. (Standard physics calls this the "Upward Leader"). This would be the protons.

When the upward leader and downward leader finally touch, the massive, blinding flash of the lightning bolt actually travels from the ground UP to the cloud (the Return Stroke). Standard physics struggles to explain why the ground suddenly decides to "reach up."

If you think about this like an actual train of electrons going down, then the first car of electrons to hit the ground would be the first ones to form hydrogen molecules, and thus would be the first place where the flash-burn explosion would occur, then followed by the second car of electrons and so on.

Therefore the explosion would have to start at the front of the train at the ground, and then go up each sequential train car up into the sky.

This is why we see the lightning go up. It is a line of hydrogen molecules burning upwards into the sky, and the chain reaction detonates the surrounding atmosphere into plasma.

The most important part about this is that the protons all facing the same direction are a magnet, and thus directionally yank the electrons at relativistic speeds with the constructive interference of a p wave, which demonstrates that this model is correct.

Part 4: Quasars are Volcanos in Space (Literally!)

Let's switch from tiny protons and electrons to something massive.

Quasars look pretty funky: they are giant black holes that on their edges spit out plasma in opposite directions for no apparent reason.

Standard astrophysics defines a Quasar as an actively feeding Supermassive Black Hole at the center of a galaxy.

It has so much mass (and therefore, so much gravity) that it violently pulls in all surrounding gas, dust, and stars. The gravity is so intense that standard physics claims not even light can escape it.

But here is the massive contradiction that standard physics has to tap-dance around. If the gravity is so absolute that nothing can escape... why do Quasars shoot two massive, blindingly bright jets of plasma straight out of their poles at nearly the speed of light?

Standard physics tries to explain this by saying the magnetic fields get "twisted up" and slingshot the material out before it crosses the Event Horizon. It's mathematically dense, but mechanically, it feels like a patch job.

However once we can map the 4D floorboards, the behavior of a quasar becomes just another phenomenon we already understand, just scaled up to a supermassive size.

If we think back to what a black hole is in this theory, then we can envision that if you force feed a black hole too much matter, then the extrusion process on the other end of the singularity where daisalts are created might get overloaded with Aether flowing out.

Just like a fire hose turned up with too much water pressure.

If the nozzle that extrudes daisalts starts flailing around, then it would probably make a lot more imperfect daions. These daions, instead of freely floating away with the Firmus current away from the singularity, would immediately flow downwards on the outside of the 4D “cone” of the black hole. Not back up the nozzle, but outside, just like a 4D volcano.

Okay but wait, nothing can escape the event horizon of a black hole!

Let's explain this again. You are a gopher. You dig a hole going down that looks like a V.

Oh no! You can't escape the hole! It's too deep! Whatever can you do?

Dig sideways. Like so: V__|

Hurray, now you escaped the hole!

Granted you were crushed and extruded to Aether and reformed as a daion and then shunted off into the Firmus, but whatever, it's science!

Now since the whole stream of gophers, I mean, daions is still being held at 0k due to the surrounding temperature of the Aether and the perfect daisalts, then the imperfect daions would be slowly rising to the top under the entire pressure of the Firmus.

Also, you are not supposed to try to boil water in the microwave because what can happen is that the water won't look like it's boiling, but as soon as you disturb it, it will flash boil immediately at the 2D surface of the water and shoot out steaming hot water everywhere. It's super dangerous.

So a quasar just compacted raw daions at 0k and then pressurized them in the Firmus, and then they are released into our 3D space, and boom, flash plasma.

In addition, the 4D channels of the Quasar would follow the curve of the outside of the black hole until they finally erupt, back outside the dipoles of the magnetic field of the Quasar.

Just like the dipoles on Earth. Just like the dipoles on protons.

We keep seeing dipoles because of the 4D geometry, which would make sense if we are really just talking about 4D objects.

Part 5: The Casimir Effect Sounds Like A Led Zeppelin Song

If you put two uncharged metal plates microscopic distances apart in a total vacuum, they inexplicably snap together.

To explain this, standard quantum mechanics claims that "empty space" is actually a boiling soup of "virtual particles" that pop into existence, exist for a fraction of a nanosecond, and pop back out. They claim that because the plates are so close together, only the tiny virtual particles can fit in the gap, while the big virtual particles hit the outside, creating pressure.

They literally had to invent particles that violate the conservation of energy just to explain a pressure differential.

But to make their virtual particles actually calculate the correct pressure, standard physicists have to use a controversial math trick called "renormalization." Renormalization is essentially a way of taking an equation that spits out "infinity," artificially crossing out the infinities, and forcing the math to equal the exact number you measured in the lab. It is the ultimate epicycle. Even Richard Feynman, who helped invent the trick, called it a "dippy process" and admitted it wasn't mathematically sound.

While I agree with the virtual particles existence, since that is the essence of daisalts, I have an easier KISS solution. (Keep It Simple Stupid.)

Let's talk about Scale Invariance. This is the idea that a good theory uses already established rules and ideas and can scale them to fit whatever happens to happen.

When we apply Occam's Razor, we can realize we don't need multiple wrenches for the same job.

We don't need magic waves from the outside. We have one single, unbreakable mechanical rule: The Up Daion is a fluid vacuum cleaner. Because that one rule is physically real, it must scale upwards.

Let's look at the Torus Dipole Stack.

Here is how this single rule scales from the invisible quantum realm all the way up to the visible world:

Level One: The Up Daion (The Spark)

At the absolute baseline of the universe, an Up Daion is a single Torus Dipole. Its gyroscope is spinning, and because it is spinning on the Firmus, it creates a microscopic, localized draft. It is a single vacuum cleaner.

Level Two: The Proton (The Strong Force)

When you put two of these Up Daions together, their drafts overlap. They suck onto each other.

Standard physics calls this the "Strong Nuclear Force" and had to invent a magic particle called a "gluon" to explain why it happens. We don't need gluons. It's just two vacuum cleaners getting stuck together by their own suction.

Level Three: Chemistry (Molecular Bonding)

When we scale up to atoms and molecules, the drafts get more complex, but the rule doesn't change. Atoms stick together to form water, or iron, or carbon, strictly because the localized fluid drafts of their protons are pulling on each other.

Level Four: The Casimir Effect (The Macroscopic Snap)

Now we scale up to two macroscopic metal plates.

Wait no way, hold on, a standard physicist would say. They would then point out that the internal suction of the protons inside the metal plates reaching out across a nanometer gap to pull the plates together is like saying a standard household vacuum cleaner can suck a bowling ball across the Grand Canyon. The Strong Force physically cannot reach that far; the electron shells of the atoms get in the way and block it.

Okay so then how do geckos stick to walls?

The Van der Waals force.

And what is the Van der Waals force?

It is the compounded, residual, leftover electromagnetic field of trillions of atoms pulling on each other.

So we already admit that fields compound and reach across nanometer gaps when you stack enough atoms together?

Why are we artificially separating the Strong Force (quarks) from the Electromagnetic Force (Van der Waals)?

One standard vacuum cleaner standing on the rim of the Grand Canyon isn't going to pull a

bowling ball across the gap. The draft dissipates into the air too quickly.

But if you build a solid wall of one trillion vacuum cleaners covering the entire cliff face, and turn them all on at once, you don't have individual localized drafts anymore. You have created a massive wind tunnel. That compounded atmospheric displacement absolutely will pull objects across the gap.

That is exactly what a metal plate is. It is a solid wall of trillions of stacked Up Daion vacuum cleaners. Once you get the air out of the way, and these two walls face each other across a microscopic gap, the space in between them doesn't stand a chance.

The exact same Torus Dipole plumbing that holds a single proton together is just operating at a macroscopic scale.

The cold weld of a metal plate in space shows that chemistry is just protons and electrons being magnets.

Let's not stop there:

Level Five: The Earth (Planetary):

An entire spinning iron core aligns to create a planet-sized P wave dipole, as in the Earth's Magnetic Field.

Level Six: Stars and Black Holes (Celestial):

We would see evidence of dipoles, such as Quasars.

Heck, let's go for broke and add a new stack:

Level Seven: Fermi Bubbles (Galactic):

We didn't even know these bubbles existed until 2010. You cannot see them with your naked eye, you cannot see them with a standard optical telescope, and you cannot even see them with a standard radio telescope.

We finally saw them using the Fermi Gamma-ray Space Telescope (which is where they get their name).

This isn't a normal telescope with a glass lens. Because it is hunting for such extreme energy, normal mirrors can't reflect it—the energy would just smash straight through the glass. Instead, it uses a massive block of dense material (tungsten and silicon). When the high-energy waves smash into the block, they create a microscopic spark (a particle shower) that the computer registers.

2. What Exactly Are They Detecting?

The telescope detects Gamma Rays.

A gamma ray is simply the highest-frequency, most energetic form of light on the electromagnetic spectrum. If a microwave is a gentle ocean swell, a gamma ray is a microscopic, violent, hyper-compressed buzzsaw.

Standard physics says these gamma rays are being produced by "cosmic rays" (electrons and protons moving at near light-speed) violently smashing into ambient gas and starlight inside the bubbles.

Which begs the question where the cosmic rays are coming from?

shrug

Okay, but no really, where did those massive, concentrated clouds of electrons and protons come from?

Why do they have the exact shape of a dipole?

Why are you waving your hands around like that and telling me a story about millions of synchronized supernovae going off at the exact same time thousands of years ago to explain where all those particles originated?

I have a better idea:

We don't need a phantom explosion. We already have a generator sitting right there at the center of the galaxy.

We already explored that mechanism under quasars, however unlike quasars which are full flows of daions, these are vents of daions, and the exhaust of the galaxy core aligns to the shape of the dipoles of the galaxy.

However this model is even better because we don't need the gamma rays to be caused by the cosmic rays. Let me explain:

If you emit a puff of smoke, then shine a flashlight through it, they both were emitted from the same place, and the shape of the glow will conform to the shape of the smoke.

Thus daions are emitted by the galaxy core, and then travel along the shape of the dipoles, and are illuminated by the gamma radiation emitted by the same core, which gets reflected to us.

Just like a laser light show at a concert.

This is starting to form a scale-invariant mechanical law: Torus Dipole Intake Effect.

The Wobble creates the Torus.

The Torus creates the Dipole Intake.

The Suction builds the Universe.

Scale Invariance is also a pretty good sign on the Stairway to Heaven of Grand Unified Theories.
(I'm telling you, these would be amazing t-shirts.)

Part 6: Zero-Point Energy Isn't Zero, Zero Is, And Why Matter Can't Be Zero

And another thing:

Standard physics knows that it is mathematically and physically impossible to cool matter down to exactly 0 Kelvin. Even in the deepest vacuum, at a fraction of a degree above absolute zero, the particle still stubbornly vibrates just a tiny bit. They call this "Zero-Point Energy."

But if you ask someone why it vibrates, they just shrug and say, "Heisenberg's Uncertainty Principle says it has to."

2. The Engine's Solution (The Wobbly Daion)

This model suggests a physical, structural reason.

A Daion isn't just a free-floating marble. It is tethered across the W-axis (the Firmus) to an antimatter Daion on the antimatter side.

The tether acts exactly like an axle connecting two wheels on a car. Because either the matter or antimatter partner is an imperfect daion, with an imperfect shape, the entire structure is off kilter. It is never perfectly, mathematically straight.

It is an axle out of alignment.

As long as that tether connects the two sides, there is an inherent, inescapable structural wobble.

3. The Wobble is the Clock

This is where the model of Quantum Time comes full circle.

The Wobble = Vibration.

Vibration = Kinetic Energy (Temperature).

Vibration = The Ticking Gyroscope (Time)

Because the misaligned axle constantly forces the Daion to wobble against the 4D floorboards, the Daion must have a baseline temperature slightly above 0 Kelvin, and its gyroscope must continue to tick. It is physically impossible to freeze a Daion to absolute zero because you cannot stop the structural wobble of at least one of the daions.

4. How to Actually Hit 0 Kelvin

This perfectly explains why scientists can't reach 0K in a laboratory with liquid helium. You can't reach absolute zero just by removing heat.

This brings us right back to the Black Hole recycling plant!

A supermassive black hole isn't just a cold freezer. It is a hydraulic press with enough pressure to physically shatter the daion.

When the daion shatters, the whole structure fails, and the Aether is extruded back into the Firmus, and new daisalts are immediately forged, of which 99.9999999% are perfect, and only we, the imperfect ones, are rejected by the Firmus to start the journey anew.

5. The Origin of the Spin (Angular Momentum)

We established that a Daion is a 4D hypersphere containing a whirlpool of Aether and vacuum that spins like a gyroscope due to a pressure differential.

In a universe where the Firmus is sitting at an absolute, frictionless 0 Kelvin, where does the initial kinetic energy for that spin come from? Once a Daion is forged, what mechanically keeps that internal gyroscope spinning forever without winding down?

1. The Eternal Boil

If you take a fluid and expose it to a vacuum, it instantly boils. The lack of pressure allows the fluid to rapidly expand into a gas.

In this model, the inside of a Daion is where the 0K Aether fluid directly touches the 0K Void vacuum. The Aether desperately wants to boil and expand to fill the void. This provides an infinite, naturally occurring source of kinetic energy—a permanent pressure differential.

2. The Planck Trap (Geometry)

If it was a macro-sized object, the Aether would just expand into a bubble and equalize. But we

trapped it inside a Vitrium shell that is a Planck length, therefore the inside is smaller than a Planck length.

Because the space is too small for a physical bubble to form and pop, the boiling energy is physically trapped. It has nowhere to expand outward, so the kinetic energy is forced to spin inside of the Vitrium shell.

3. A Daion Is The Perpetual Motion Machine

Because the Aether is a superfluid at absolute zero, it has exactly zero viscosity. It generates zero internal friction.

So we have a trapped, boiling superfluid being forced to run in a circle, and it encounters absolutely zero friction to slow it down. The laws of fluid dynamics dictate that it must spin forever. That explains the origin of Angular Momentum.

Boss Fight: How CERN Mimics A Black Hole

When I learned about how they make antiprotons, I really thought this theory was dead on arrival. Truly.

I would have totally accepted that fate. Thus is science. I get it. If you've gotten this far, I hope you at least trust that I'm not trying to inject Ancient Aliens into science.

I can just imagine someone in a white labcoat patronizingly pretending to pat me on the head, saying, "There, there little pseudoscientist, come back when you have pieces of paper that say you are smart."

I'm jumping the gun, let me show you the problem first:

So how they make antiprotons is they slam two protons at each other at 99.99% the speed of light, and after they do this, they get three protons and one antiproton. So like:

2 protons \rightarrow 3 protons + 1 antiproton

I was staring at the above going, what the hell? How do I explain this? That would be six daions magically turning into twelve! (1 proton is 3 daions, therefore $6 \rightarrow 12$)

I don't have magic particles coming out of other things, why does this work? And I agree that it does, the three protons are real, they detect them and they know they are just regular protons.

I was about ready to throw in the towel, which absolutely sucks, because come on, this theory

solves like 24 things already, that's got to count for something. What am I missing?

Then I realized the above equation is missing a crucial part:

Energy + 2 protons \rightarrow 3 protons + 1 antiproton

So if you slam two protons together, and neither one can break, because it's not enough energy to bypass the c^2 limit, then it's like slamming two brick walls together, and all of that momentum has to go somewhere.

It has to go sideways.

Just like if you spray a fire hose at a brick wall, it will make opposing vortex bubbles perpendicular to the wall.

So in this case, you have energy plus a vacuum plus compression, plus a vertex dipole effect, which is also what this theory has:

In a black hole.

So therefore the two protons slam into each other, and the energy of the compressional collision is transferred like a printing press into two opposing equal yet alternate spin protons, which would be:

2 original protons + 1 new proton sideways + 1 new antiproton sideways

How the heck does energy make matter? It's the backwards bicausal $m=E/c^2$

Part 7: The Standard Model Lagrangian, Or Why Gravity Is Three Things

We dodged Navier-Stokes (and didn't win the cash prize unfortunately), however now we are staring straight in the eyes of at the boss fight of modern physics.

The Standard Model Lagrangian is the single most successful equation in human history. It unites electromagnetism, the strong nuclear force, and the weak nuclear force, and it includes the Higgs mechanism to explain how matter gets heavy.

It also, as I might add, completely ignores Gravity. Every time they try to plug gravity into it, the math blows up.

That means they are three-fourths of the way there. Not to sound impatient, but what's the hold up?

The Uncrossable Chasm

In standard physics, the universe is broken into two completely incompatible languages:

The Standard Model (Quantum Mechanics): This is the math of the tiny. It handles the strong force, the weak force, and electromagnetism. It is discrete, jagged, and built on particles bumping into each other.

General Relativity (Gravity): This is the math of the massive. It handles planets, stars, and galaxies. It is perfectly smooth, continuous, and built on bending geometry.

Every time standard physicists try to force these two mathematical languages to talk to each other, the equations spit out infinities and crash. They've invented String Theory, Loop Quantum Gravity, and M-Theory with 11 dimensions just trying to build a bridge between them.

So let's talk about Gravity then:

The Mechanics of Gravity (A Three-Part Machine)

1. The Macro-Crush: Void Pressure

The universe is under massive hydrostatic compression. The Void is constantly pushing down against the 3D surface. It provides a downward pressure uniformly across all matter sitting on the surface. It is the anvil pressing down from above.

2. The Micro-Pull: Tether Working Tension

Every piece of standard matter (a Daion) is connected to its antimatter counterpart deep in the 4D Aether via a 1D elastic tether under working tension.

3. The Resulting Slope: The Geometry of the Firmus

When you have trillions of quantum tethers pulling down on one localized spot (like a star or a planet), and the Void pressure pushing down from above, the structural integrity of the Firmus sags under the stress. The floorboards physically bend into a funnel on the warp axis. This is the localized geometry of space.

The Watermelon Seed Effect

When you combine these three things, the "mystery" of gravity vanishes into basic fluid dynamics.

When an object enters this warping geometry, it is sitting on a physical slant. The Void pressure is still pushing strictly straight down from the top. But because the Firmus floorboard is now

slanted, the pressure pinches the object.

Like a wet watermelon seed squeezed between your thumb (the Void pressure) and your angled index finger (the Firmus geometry), the object is mechanically forced down the slope.

Therefore we can now agree with quantum mechanics (entanglement exerts force) AND agree with Einstein (trajectories follow geometry) simultaneously without breaking the rules of either.

This is a massive paradigm shift. We are taking the most intimidating, unsolvable mathematical paradox in history and fixing it with the same math an engineer uses to calculate the sag of a steel beam in a CVD chamber.

This solves the Vacuum Catastrophe, the Hierarchy Problem, and fills in the fourth blank of the Lagrangian Equation in one fell swoop.

The combined Cymatic Lagrangian Equation is in the Appendix.

Part 8: Deflating the Big Bang Balloon

Science, I give you a choice:

You either believe in magical roads made of nothing or you don't.

The standard model has two magical roads, the one made of time, and the one made of gravity. This means currently we accept that the past and future magically exist somewhere, and this has led to the paradoxical idea that the past is literally supporting the mass of galaxies, but that space is also made of nothing.

I understand why we all have been conditioned by our very natures to have bubble bias. Science, by its very nature, is causal. Stuff happens that makes other stuff happen and we observe it and share it with others.

In a way I'm asking that even Science itself must change in order to allow for a bicausal universe. In this book I've noted many times where the math blew up and people discarded it because, hey that can't be right. Take even the formula for velocity, when you let time be zero, then no matter the distance, the velocity is infinity. Which is true for all bicausal things relative to themselves. It's right there in the math.

This by far is the hardest section of this book to write. I too have believed in the big bang, and honestly it has made sense.

I find it tragic that I now must conclude that the balloon model is outdated. Without an accurate

view of what time really is, then humans will have to continue to live with Bubble Bias.

Let me walk you through the logic that I have come to know, and if works for you, excellent, and if it doesn't, well then, we can continue to dig for gold in the parking lot of bad ideas.

If time is only a measurement of our quantum clocks as matter, then there does not need to be a Time track. If there is no time track, then our matter, at the basic level of our quantum coalescence, is not going anywhere along a time axis. That means if you trace back the 14 billion years that it takes light to get here, you do see yesterday, but that is not necessarily the beginning.

Currently when you think of light as a baseball, of course, in a pure vacuum, the ball would never slow down. I agree!

The “tired light” hypothesis of the past tried and failed to describe exactly how and when light becomes tired, because they lacked the medium and the extra dimension.

This model succeeds since light is a bicausal earthquake wave that lacks the motor to even run a time clock, and therefore the red shift toll compounds exponentially the further the light travels, and the light gets radically redder the deeper we look.

The mechanical reality of Optical Friction is the exact kind of Occam's Razor necessary to banish mystical space vapor.

To make this scientifically and mathematically rigorous—something we can't just wave away again—we need to close three specific trapdoors:

Here are the old arguments, and how this model elegantly disarms them.

1. The Blurring Problem (Scattering vs. Clean Friction)

The Attack: If light is hitting physical friction in space, it should scatter. Distant galaxies should look blurry, like looking through fog. But the Webb Telescope shows crystal-clear galaxies billions of lightyears away.

The Defense: The Firmus is the perfect ideal Euler inviscid fluid of OK Daisalts, and light does not experience time, therefore from start to finish, the hypercolloid acts as a rigid perfect lattice in that exact geometry. However, when light (the S-wave shear) snaps through the floorboards, it does hit random obstacles and acts as a wave.

Light is not a baseball scattering like a bunch of marbles on the floor. Therefore the picture does not blur.

It loses amplitude (energy/color) because it has to physically pluck the stiff lattice, paying the

"redshift toll."

We do see degradation of the picture. The furthest, most tired light we see is a mess of half barcodes that have traveled through a forest of hydrogen, and the reason why we can still make out a picture is for the same reason the double slit experiment splits light into lines on the wall. The constructive and deconstructive interference of a wave.

In addition, this transfer is at the resolution of a Planck length, so even our best detectors would not be able to discern any variation, up to the most tired light, akin to how the human eye cannot tell the difference between higher and higher resolution television screens.

2. Reclaiming the CMB (The Tired Light)

The Attack: The ultimate "proof" of the Big Bang is the Cosmic Microwave Background (CMB). Standard physics claims the 2.7 Kelvin background radiation is the cooling echo of the original explosion.

The Defense: We already explored this earlier, however let's explicitly restate it here.

The CMB is not an explosion's echo. It is the natural consequence of light red shifting beyond infrared into microwaves and radio waves. Light would logically follow a progression from the most energetic constructive interference to the lowest energetic deconstructive waves, just as seen in tsunamis on the ocean.

Thus the "Big Bang Echo" is "Light Being The Most Tired".

We would therefore see this from all directions, this also solving the next paradox.

3. Olbers' Paradox (Why is the Sky Dark?)

The Attack: If the universe didn't start at a specific point in time, and it is infinite, then every line of sight should eventually end on a star. The night sky should be blindingly white. This is Olbers' Paradox, and standard physics says the Big Bang expanding universe is the only way to solve it.

The Defense: Optical Friction solves Olbers' Paradox perfectly.

Because light pays a toll to the Firmus, it doesn't just redshift—eventually it runs completely out of energy.

If light travels far enough through the hypercolloid, the S-wave flattens out entirely. The wave dies.

The night sky is black not because the universe had a beginning, but because light has a maximum physical range in the Firmus before the floorboards absorb all of its energy.

The Quantum Time Riposte:

Quantum Time does not require Dark Energy to explain the optical friction of the Firmus compounding over distance. The Big Bang does.

All we need is a seismologist and a Newton's cradle.

This completely deletes the need for Dark Energy. The universe isn't accelerating apart. There is no contradictory space that is simultaneously nothing which can stretch faster than the speed of light and yet also support the weight of all of the matter in the observable universe without punching a hole in the trampoline.

The magical party is over. Consider the big bang balloon deflated.

Part 9: Entropy Is One Step In The Cosmic Cycle

Time for some good news:

In standard physics, Entropy is a runaway train. In the big bang model the universe is a wind-up toy that is slowly running out of energy. Eventually, all the stars will burn out, all the heat will dissipate into the expanding empty balloon, and the universe will end in a frozen, dead state called the "Heat Death."

Standard physics has two massive "garbage" problems that lead them to the Heat Death: dead matter (broken stars) and dead light (redshifted photons fading into the void).

Entropy (the decay of energy and order) is all we can directly observe in the 3D Bubble Zone.

Syntropy (the coalescence of decay and order) happens where we physically cannot reach or detect due to our very nature as beings made of matter.

This model naturally contains two perfectly matched Syntropic heat sinks to catch both of them. Here is how these two sinks work in harmony to eliminate all waste in the universe.

The Dual-Exhaust System:

Sink 1: The Black Hole (The Matter Recycling Plant)

This sink handles the physical, structural waste.

The Problem: Up in the Bubble Zone, matter decays. Stars burn through their fuel, structural Bicausal axles warp, and the system becomes cluttered with dead, chaotic mass.

The Sink: The Supermassive Black Hole. It acts as the physical trash compactor. It crushes the dead matter, snaps the Bicausal tethers, strips away the ticking time gyroscopes, and drops the particles to 0 Kelvin.

The Result: The chaotic matter is re-ordered into Aether and perfectly identical Daisalts, joining the frictionless Euler flow of the deep-sea currents. The structural waste is recycled perfectly (almost, except for matter and antimatter).

Sink 2: The Aether (The Kinetic Sponge)

This sink handles the radiant, thermal waste.

The Problem: The Bubble Zone is blindingly hot. Stars pump out unfathomable amounts of light (S-waves) and kinetic heat. If there were nowhere for that heat to go, the 3D surface of the universe would eventually boil or burn itself out.

The Sink: The Aether continuum. Because it is a formless 0 Kelvin medium that fills the gaps between the Daisalts, it acts as the ultimate thermal sink. As light drags across the floorboards (the Extinction Coefficient/Redshift), the "burnt out" kinetic energy is absorbed directly into the Aether sponge.

Because the Aether has no quantum signature, it acts as a non-local continuum where vibration is instantly absorbed across the infinite Firmus, preventing any localized heat or rippling.

The Result: The Aether tirelessly absorbs the continuous electromagnetic and thermodynamic exhaust, preventing the Bubble Zone from overheating.

The Perfect Tandem

This is why a Dual-State Plenum is a true perpetual motion machine.

If we only had the Black Holes, the physical matter would recycle, but the light and heat would build up until the universe choked on its own radiation.

If we only had the Aether, the light would be safely absorbed, but the physical matter would eventually rot into chaotic dust.

Because we have both working in tandem, the ledger is always perfectly balanced.

The physical structure is repaired by the Black Hole.

The kinetic heat is absorbed and regulated by the Aether.

Given these mechanisms, we can build a cycle:

Entropy → Destruction → Syntropy → Creation → (Repeat)

Given this loop, let's look at galaxies:

1. The Pressure Equation Must Balance

Think about the pressure mechanics of this model. Where is the absolute highest point of 4D pressure? Directly underneath a supermassive black hole. That is a trash compactor: it crushes old Daions and extrudes their energy down into the Euler Firmus.

But fluids are incompressible. If you push down in one spot, the fluid must well up somewhere else to balance the pressure.

In a shape we already recognize.

2. The Firmus is a Hurricane

This means the Firmus itself is a massive thermodynamic convection cycle.

The 3D Galaxy (The Downdraft): The supermassive black hole at the center is the massive gravity drain, sucking in old matter and crushing it out of 3D space.

The Firmus (The Updraft): The immense pressure created by the black hole forces the Firmus to vent newly forged Daions (hydrogen gas) up into the surrounding area and beyond.

This completely solves a massive headache in standard astrophysics called the "Gas Depletion Problem." Standard physicists look at spiral galaxies like our Milky Way and realize that based on how fast stars are forming, the galaxy should have run out of hydrogen gas billions of years ago. They constantly ask, "Where is the fresh gas coming from to keep the galaxy alive?"

Well they have it, but they call it the Cosmic Web, which I agree exists, I just disagree as to why it exists, and when we look at the details, the Cosmic Web is a topographical map of the Firmus, and where daions are vented into our 3D space.

1. The Nodes (The Cities)

In standard physics, the web isn't something that just stretches between galaxies; the galaxies are the nodes where the massive filaments intersect.

Think of a 3D spider web. The filaments are the silk threads. The galaxies are the massive dewdrops that pool exactly where multiple threads cross. The galaxies are physically embedded inside the web. In fact, standard physics calls them the "hubs" of the network

2. The Circumgalactic Medium (The Suburbs)

Before the gas ever gets to the long, deep-space highways of the filaments, there is a massive halo of gas immediately surrounding every single galaxy. Astronomers call this the Circumgalactic Medium (CGM).

If the galaxy is a city, the CGM is the massive, sprawling suburbs. The gas here is thicker than in the deep-space filaments, but much thinner than inside the galaxy itself.

Let's pause here for a moment and remember Displacement Mounds from earlier as the discrepancy in the Hubble Constant:

The Local Measurement: When astronomers measure the speed of local galaxies using supernovae and Cepheid variable stars (objects sitting right inside or on the edge of galactic rims), they get a Hubble Constant of roughly 73 to 74 km/s/Mpc.

The Deep Space Measurement: When astronomers measure the oldest light in the deep universe, they get a Hubble Constant of exactly 67 km/s/Mpc.

If the Hubble Constant is a localized measurement of the elastic tension of the 4D hypercolloid, and gravity is a warp in the Firmus, you would have a reverse gravity well hemming matter out, much like a hill surrounding a city.

For gas trying to fall in from the Cosmic Web, it has to have enough kinetic velocity to crest the ridge before it can slide down into the galaxy.

And this would manifest as a massive halo of gas immediately surrounding every single galaxy, as in the Circumgalactic Medium.

The Runoff Valleys (The Deep-Space Filaments):

In addition, because the Firmus is a connected 4D hypercolloid, there are microscopic geometric tension lines connecting the massive galactic sags. The Daions that floated to the extreme distances of intergalactic space would naturally condense and run along these geometric valleys, forming the massive, glowing filaments stretching between the galaxies.

The Cosmic Web is therefore precisely the topological map of where the Firmus vents Hydrogen.

Now back to Entropy:

What we've been missing before is the other side of the cycle, and this has led us to hypothesize a universe of eventual decline.

If however, we fully map the 4D landscape, then we would discover that the universe contains mechanisms of Syntropy, and is thus a Closed-Loop Thermodynamic Engine.

The universe never runs out of energy because energy never leaves the universe.

Epic Boss Fight: First Law of Thermodynamics

Any physicist worth a damn is asking, yeah, but where does that energy literally go? If the Aether is absorbing infinite kinetic heat from 14 billion years of starlight, the First Law of Thermodynamics dictates that energy cannot be destroyed.

Here's my answer:

Aether is literally energy. I'm not destroying it, it's going home.

The energy goes back into the Aether.

In standard physics, "heat" is not a physical object. Heat is strictly defined as the kinetic vibration of individual particles bouncing into each other. If you have no particles, you cannot have a temperature.

Aether is the fountainhead from which all matter can flow from and then flow back into. This is the very nature of a closed loop. If we take that something was once something, then we make that thing that thing again, then it would become a part of the whole.

The Aether has no quantum signature. It is not made of individual particles (Daions), has no individuality, it is the pure, continuous basic plenum.

Therefore, the Aether cannot heat up. It is physically impossible for the Aether to hold a temperature above 0 Kelvin because there are no individual pieces to vibrate.

Yes but where does the energy from the dying light go, as in where does the heat go?

Look at the phase change backward. You are a causal creature made of matter trying to force a bicausal process into a causal process. This is Bubble Bias.

Where does math say $2+2$ goes after it goes to 4? Can it go back to $2+2$? That's how energy goes back to the Aether. Bicausally.

When the kinetic energy of a light wave finally burns out and dissipates into the Aether, the energy is not destroyed (preserving the First Law), but it ceases to be "heat." It simply melts back into the raw, latent potential energy of the plenum.

I am not violating the First Law of Thermodynamics; I am enforcing it on a universal, bicausal scale. The total amount of energy in the universe never changes. It simply cycles between two

states: Quantized (Matter) and Non-Quantized (Aether).

Boss Fight: Why Venus Spins Backwards, And Why Science Can Be Stagnant

I watched a video where Feynman described that no one really knows why Venus spins backwards, and they think it's either space debris or Venus pulling from the inside to alter its spin.

At some point in the description he says that dust and gas coalesced into the planets.

And I'm like dude, dust and gas behave differently than a solid. Those are two separate things, and over time, if they turned from one thing to another, then they would use different sets of rules for each thing.

No one gets confused when water is a liquid and then acts differently as ice.

So here's what that would look like on a planetary scale:

Phase 1: The Puff of Smoke (Fluid Mechanics)

When the solar system first ignited, it was entirely a fluid medium—a massive, swirling puff of gas and dust being drafted toward the central Torus Dipole of the Sun.

A puff of smoke doesn't just travel in a straight, uniform line. As the gas shears against itself, it creates alternating left-and-right eddies to balance the pressure.

During this phase, the swirling gas pockets that would eventually become planets were absolutely spinning in alternating directions. Prograde, retrograde, prograde, retrograde, wax on, wash off, wax on, wash off.

Phase 2: The Solid Skate (Geometric Mechanics)

However, once the fluid cools and locks together into a solid, the rules of the engine physically change.

Once a planet becomes a solid rock, it is no longer a chaotic system of eddies skating on the Firmus. It is now the "raindrop on the tent canvas" we described in Chapter Seven.

Earth, Mars, and Mercury cleared their lanes. They hardened into solids, shed most of their primordial gas, and began rolling forward on 4D floorboards.

To maintain their orbit around the Sun's massive gravitational funnel, the solid rock planets have

to physically skate along that slope. And geometrically, if a solid sphere is rolling forward around a curved funnel, the slope is going to naturally force it to roll forward.

The solid planets all "want" to skate in the same direction because they are all rolling around the exact same 4D geometric drain. They all skate prograde.

The Venus Exception (Stuck in Phase 1)

So why did Venus stay spinning backwards? Because it never fully made it to Phase 2.

Venus is trapped. Its atmosphere is 90 times thicker than Earth's. It is essentially still a massive, unbroken fluid ocean of gas. It never stopped being a "puff of smoke."

Because the gas layer is so overwhelmingly thick, the original reverse-spinning fluid eddy never died. That super-rotating, backward-spinning gas jacket is acting like a massive fluid brake, constantly grinding against the rock and physically preventing the solid core from skating forward like the rest of the planets.

If gas dictates the spin, a skeptic might ask: Why do the gas giants spin forward instead of alternating backward?

Let's list the planets and organize them in what we would expect from gas turning into solids with Prograde and Retrograde alternating:

1. Prograde Mercury
2. Retrograde Venus Stayed Retrograde, slowly changing to Prograde
3. Prograde Earth
4. Retrograde Mars turned to Prograde
5. Prograde Jupiter
6. Retrograde Saturn is actually Prograde
7. Prograde Uranus is actually a weird Retrograde
8. Retrograde Neptune is actually Prograde

Aha! Saturn should be Retrograde since it's a gas giant and instead it's totally Prograde!

Okay here's the deal: gas giant is a total misnomer. Saturn's core fits into roughly the same physical volume as Earth, and it contains 9 to 22 times the mass of Earth.

Saturn isn't a big ball of gas, it's a solid that transitions to liquid then gas. So when the solid started turning prograde, then the rest of Saturn followed suit. Like a giant blender.

Also, Uranus is literally twice as far from the sun as Saturn is. At a certain point a planet would barely be in range of a sun's gravity well to maintain an orbit, and other factors would affect the

direction of a spin, such as composition:

At the absolute center of Uranus is a relatively small, dense core made primarily of silicate rock, iron, and nickel.

Compared to the massive core system of Saturn, Uranus's core is surprisingly tiny. It contains roughly 0.55 times the mass of Earth (about half an Earth mass) and only makes up about 20% of the planet's total radius. It is a dense, hard anchor at the bottom of the planetary gravity well.

The core itself is just a small rocky pit. The vast majority of Uranus's mass—roughly 80% of the entire planet—is wrapped around that core in a massive, churning mantle.

Astronomers call Uranus an "ice giant," but that term is mechanically misleading. The mantle is not made of solid ice cubes. It is a violently hot, highly pressurized ocean of supercritical fluid made of water, ammonia, and methane.

Because the pressure is so high, these molecules are crushed into a state that is simultaneously as dense as a liquid but moves like a gas. This layer is extremely hot (reaching up to 9,000 degrees Fahrenheit or 5,000 degrees Celsius near the core).

This internal fluid structure is what makes Uranus behave so strangely. In Saturn and Earth, the magnetic fields are generated deep near the core (by liquid metal or molten iron spinning with the planet's rotation).

But in Uranus, the magnetic field is generated much higher up, entirely within that churning "icy" slush ocean. Because this electrically conductive fluid is sloshing around outside the small rocky core—and because the planet itself is knocked over on its side at a 98-degree angle—Uranus's magnetic dipole is completely chaotic. Its magnetic field does not align with its north and south poles; it is offset by nearly 60 degrees and misses the physical center of the planet entirely.

In short, the core of Uranus is a small, half-Earth-sized ball of hot rock, buried under a colossal, deep-space ocean of pressurized, electrically charged ammonia and water.

It would be like a crazy gyroscope top skating along whichever way the water went. Think Navier-Stokes chaos.

Neptune is already Prograde if we care.

And we can't talk about Pluto.

So this mechanically separates the history of the solar system. Everybody fits into a gas goes to solid model in various degrees of doing that.

The Spin Origin: Fluid eddies in the gas dictate the initial rotation (alternating left and right).

The Orbital Correction: Solid mechanics and gravity take over, forcing the hardened rocks to skate forward on the slope.

The Anomalies: Planets like Venus that retained too much fluid gas get stuck fighting the floorboards.

Standard science says, hold on, due to current accretion disks theory all things should move along the same prograde track from the start.

However this assumes the solar system was all started at the same time. If you already had a history of stuff collecting like debris, then the system would be way more chaotic, kind of like a Navier-Stokes equation or a river full of rocks.

1. River Whirlpools

If you watch a fast-moving river, the water in the absolute center of the channel is moving the fastest. The water near the banks is moving much slower due to friction with the shore.

The boundary where that fast water grinds against the slow water is called the eddy line (or shear zone). The fluid cannot handle that structural friction, so the shear zone physically breaks apart and rolls up into whirlpools.

Because the inside edge of the whirlpool is being dragged downstream by the fast water, and the outside edge is being dragged upstream (relatively speaking) by the slow water, the resulting whirlpool is forced to spin backward, against the main flow.

This is one example of the accretion disk of the solar system. The fast inner tracks of the solar fluid grind against the slow outer tracks, creating a planetary-scale "eddy line" that sheds backward-spinning whirlpools (like Venus).

What's another?

2. Hurricane Mesovortices and Anticyclonic Tornadoes

When a hurricane spins, the entire massive system is rotating cyclonically (prograde). But inside the most violent part of the storm—the eyewall—the wind shear is so extreme that the fluid breaks down. The hurricane sheds smaller, localized tornadoes called eyewall mesovortices. While most of these spin with the storm, the extreme shear frequently spawns counter-rotating (anticyclonic) vortices.

We see this even more clearly in massive supercell thunderstorms. A supercell is a giant, prograde-spinning cyclone. But as the fast, rotating updraft grinds against the slower, sinking

downdraft, it creates a massive shear wall. To relieve this tension, the storm will frequently drop an anticyclonic tornado—a tornado that spins completely backward compared to the massive storm that birthed it.

Nature literally spins up retrograde tornadoes just to balance the fluid tension of a prograde storm.

Any other examples?

3. The Von Kármán Vortex Street

In fluid dynamics, there is a specific, heavily studied phenomenon called a Von Kármán vortex street.

When a moving fluid (like wind or water) hits a blunt object, or when two massive fluid fronts shear past each other, the fluid separates and sheds alternating vortices in a perfectly repeating pattern: one spins clockwise, the next spins counter-clockwise, the next clockwise, and so on.

We see this in the atmosphere all the time when wind blows past a mountain or an island. Satellites take pictures of massive cloud formations peeling off into perfectly alternating, counter-rotating dipoles.

Standard physics treats gravity, gas, and solid matter as completely separate phenomena. However we can see it and know it's all just the exact same engine transitioning from fluid dynamics into structural geometry. This maps to the observable data without needing to invent random, catastrophic asteroid collisions for every anomaly.

What is the takeaway that the science establishment should embrace?

There's a Buddhist parable, (and I'm paraphrasing here, because that's what I do), and the gist of it is the student asks the master how to attain enlightenment, and the master replies, "Carry water, chop wood."

And the student asks what the master does after attaining enlightenment, and the master replies, "Carry water, chop wood."

Part 10: The Universe Is Simultaneously Complex And Simple

Let's drill all the way down to the bedrock.

The universe is bicausal and thus prefers symmetry, and ultimately unification with the aether.

Symmetry is the simplest representation of Bicausality.

That isn't just a good t-shirt; that is a foundational law of physics. That is one of the most mystical, almost sacred concepts in standard physics—Symmetry—and reduced to a basic mechanical hardware requirement.

Standard science treats symmetry like it's a magical aesthetic preference of the cosmos. They marvel at how the universe "loves" balance. The universe doesn't love anything. It only has a bicausal processor.

1. Symmetry is Just a Taut String (The Hardware Limit)

If the universe can only process math via a 1-Dimensional tension line (a bicausal $x = y$ connection), then symmetry isn't a choice; it is a structural mandate.

Think about a rubber band. If you pull it, you cannot create tension on just one side. It is physically impossible. The moment you pull point A to the left, point B must pull to the right with the exact same amount of force.

Standard physics calls this "Newton's Third Law" (Every action has an equal and opposite reaction) or "Conservation of Energy."

I am calling it what it actually is: Bicausal Symmetry.

Because the hypercolloid floorboards connect everything with 1D strings, every equation must balance perfectly across that equals sign. If it doesn't balance, the string snaps. Therefore, the only surviving structures in the universe are perfectly symmetrical ones. The universe doesn't "prefer" symmetry; it literally cannot process anything else without the engine seizing.

2. Unification with the Aether (The Slack String)

Why does it ultimately prefer unification with the Aether?

In this model, what is matter? What are Daions and gravity wells? They are tension. They are geometric sags, wobbly pegs, and stretched floorboards.

A bicausal equation like $x = y$ (where x is a value greater than zero) represents a universe under stress. The rubber band is pulled taut.

But what does every physical medium in existence naturally want to do? It wants to go slack. It wants to release its stored potential energy and return to its flat, resting baseline.

The Aether (the raw, non-quantized Firmus) is the ultimate slack string. It is the perfect $0 = 0$.

When a particle decays... it is a string releasing tension.

When a photon bleeds out into the Cosmic Microwave Background... it is a string going slack.

When a Black Hole crushes matter back into raw, smooth space... it is an iron smoothing out a wrinkle in the floorboards.

3. The Simplistic Grand Unification

Standard physics calls this process Entropy, and they treat it like a depressing march toward the Heat Death of the universe.

But this bicausal model frames it completely differently: The universe isn't dying. It's just tired of holding the rubber band open.

This insight unites three completely different branches of physics:

Newtonian Mechanics (Action/Reaction): Just bicausal tension on a string.

Particle Physics (Conservation/Symmetry): The string can't be pulled on one side without pulling the other.

Thermodynamics (Entropy/The Aether): The string ultimately wants to snap back to $0=0$.

This is the philosophical anchor. All of the math, all of the physics, and they all lead us down the bicausal road to the physical elasticity of the floorboards trying to flatten themselves back out to zero.

Secret Ending Boss Round: The Mathematical Isomorphism Enterprise, We Explore Where Other People Have Gone Before

Yes Spock, let's be Vulcan for a second.

In logic and mathematics, there is a concept called Isomorphism. It means two completely different systems can have the exact same mathematical structure. If System A and System B are isomorphic, every single piece of data that proves System A also perfectly proves System B.

This engine is an ontological isomorphism of the Standard Model and General Relativity. We are not changing the data; we are changing the physical definitions of the objects creating the data.

The Vulcan's Critique: The Missing Bridge

This engine is logically consistent and maps to the observable data. But from a strict Vulcan perspective, here is the singular, massive hurdle this framework faces to achieve accepted scientific rigor:

We must mathematically prove the isomorphism.

It is logically sound to say, "The mass of a muon is just the fluid drag coefficient of a tumbling Up Daion." But to defeat standard physics, we eventually have to show the mathematical bridge. We have to take the fluid dynamic equations of this hypercolloid (essentially, a 4D version of the Navier-Stokes equations) and show that, for a hypothetical example, when a Torus Dipole tumbles at X velocity, the resulting drag equals exactly $105.65 \text{ MeV}/c^2$ (the exact mass of a muon).

Standard physicists accept "magic particles" because the math is perfectly calculated. Right now, this engine is conceptually perfect, but we are replacing their highly calculated magic with conceptual fluid dynamics.

Yes Spock, this is true.

However I don't have to invent the math if you already did:

The Math Already Exists

I am talking about a field of physics called Analog Gravity, which was pioneered by a physicist named Bill Unruh in 1981, and later expanded into the Fluid/Gravity Correspondence in 2008 by a team of physicists (Minwalla, Bhattacharyya, Hubeny, and Rangamani).

Here is exactly what they proved mathematically:

1. The Acoustic Metric (Unruh's Math)

Bill Unruh proved that if you take the equations for a sound wave (a compressional P-wave) moving through a flowing fluid, that math is identically isomorphic to Einstein's equations for light moving through the curved spacetime of a black hole.

The math is so perfectly identical that scientists now literally build "dumb holes" (acoustic black holes) in water tanks in laboratories to test General Relativity, because the fluid math and the gravity math are exactly the same.

2. The Navier-Stokes Translation (The 2008 Proof)

In 2008, physicists took it a massive step further. They took Einstein's Field Equations (the

ultimate, undisputed math of gravity) and mathematically proved that under the right conditions, they perfectly translate into the Navier-Stokes equations (the ultimate, undisputed math of fluid dynamics).

They proved that a geometric ripple in spacetime behaves exactly like a viscous fluid dissipating heat.

When standard physicists look at Unruh's math and the Fluid/Gravity Correspondence, they say:

"Wow, what an incredible mathematical coincidence! The math of fluid dynamics perfectly models the math of gravity. We can use this 'neat trick' to study black holes by looking at water tanks."

They explicitly call it an "analogy." They refuse to believe that space is an actual fluid, so they just treat the identical math as a lucky, abstract quirk of the universe.

I don't need to write a single new equation. Here are your peer-reviewed Fluid/Gravity Correspondence papers.

It is not a mathematical coincidence, and it is not an analogy. The reason the Navier-Stokes fluid equations perfectly map to Einstein's geometric equations is because the universe is literally a 4D hypercolloid fluid.

You built the math to describe fluid drag, vortexes, and acoustics.

I am using your exact math to prove this ontology.

I am simply pointing out that the math works because the Daion is literally experiencing fluid drag, the black hole is literally a fluid vortex, and gravity/light are literally acoustics.

Here is your chalkboard. You accidentally mapped the exact plumbing of the Firmus.

You already built the mathematical bridge for me; you just didn't realize what you were building. "Fluid = Gravity" equations have already been peer-reviewed and accepted by standard physics.

Does it make empirical sense given the objects in the universe?

Yes.

By defining the universe as a hypercolloid with varying tension, and matter as Torus Dipoles drafting that fluid, we have built a mechanical system that naturally produces the exact phenomena we observe—gravity, light, time dilation, and quantum bonding—without needing

to invent a single extra dimension, expanding balloon, or magic particle.

We have built a completely rational, closed-loop machine. The logic holds. The next step for the rest of humanity will be translating these mechanics into more chalkboard math.

Vulcan checkmate.

Chapter Seven: The End Is The Beginning

Thus the thought experiment comes to an end. You can see why it's not in a scientific journal, because you really need to see all of it in its entirety to understand the sheer scope of how getting rid of Time as an axis can progress our understanding of the universe.

Here are the band aids the standard model needs to support its bloated weight:

- The past
- The future
- Dark matter
- Dark energy
- Gravity supported by space as nothing
- Space as an axis stretching faster than light
- Light just keeps traveling like a baseball forever
- Everything is a particle and so there's like 17 of them
- Hydrogen clouds sticking around for 14 billion years without doing anything

On the other hand, for the most part, you can see that all I did was stitch two blankets together to make a synergistic quilt.

Once you move the piston of time off the road and into the quantum RC car, it becomes almost trivial to drive on Einstein's rubber sheet.

I used these known processes to understand what a 4D axis and 4D objects would look like in one self-contained universe:

- Earthquakes
- Fluid dynamics
- Newtonian physics
- Quantum entanglement and pretty much all of QED including virtual particles
- Relativity

This model has no band-aids. It has energy as a superfluid, one perfect Planck hypersphere made out of energy, and one bent hypersphere. Everything else flows from these three things.

In fact, it even closes the door on various science related phenomenon that we have previously hypothesized but that will not come to pass:

No time travel since no past to go to, and the future isn't there yet. Sorry Avengers.

No fractal infinite multiverses where one photon travelled one infinitely different directions. Sorry Avengers again.

Fermi's Paradox: since you have to literally be a 4D creature to travel the 4D universe, we as 3D beings are stuck to our galaxy. So this limits the number of galaxies we would see aliens from all of them to just our neighborhood galaxy. Sorry Star Trek and Star Wars and literally all space science fiction.

How did we get from virtual particles to daisals? Stephen Hawking, I owe you a debt of gratitude for the virtual particles. In this model there would be a couple of changes however. First off, black hole event horizons do not have the energy required to create matter. The insides of fusion reactor stars can't do that, they can only make hydrogen into like helium, etc. The inside of a black hole, where the math says it's a singularity, that's what would have the power to forge new matter. Knocking a particle into an event horizon is like dropping a rock off a steep cliff.

How can you have movement without time? The equation is literally velocity equals distance over time? I have no clue. When I say bicausally I mean mathematically they are instantaneously, but why are p waves faster than s waves and are they both instantaneous with regards to themselves? Are they sequential? Again, I have no clue, as we only have our relative time clocks to measure this stuff with.

Wait, there's another side to the universe? Is there another me on the other side, and if we meet will we explode? Yes there's another side to the universe, but it's not a 1 to 1 mirror because of how the dispersion works. Antimatter is for all intents and purposes just like our matter, just the time spin is flipped. The other side is doing its own thing, it's just that daions can't travel very far from their dispersion point, at least as far as the quantum entanglement is concerned. It would be highly unlikely that there would be an exact antimatter replica of you. So no.

Why do black holes evaporate? Because they are a bucket with a hole. If they stop feeding, they eventually drain into the Firmus. It's not because the event horizon creates matter and pays the piper. The piper is paid on the pointy end of the black hole. Then the warp over time fills back in where the black hole was.

What happens after the black hole evaporates? The Firmus snaps back into its permanent shape, like a rubber band. Hence why Space-Warp is 99.9999999% uniform.

What happens when you fall in a black hole? You get crushed, not spaghettified. All the information is lost because there is no train of time. It's a one way recycling center. Also, no it's not a wormhole that will lead you to the antimatter half of the universe. If that happened, and the black holes touched, either the universe would explode, or the Firmus would heal itself. Your guess is as good as mine.

Why doesn't all the matter just clump into one giant black hole? Since matter is incredibly rare and it can't travel long distances through the empty "rigid glass" voids, it stays where it landed. This causes the universe to look like a bunch of sprinklers on a lawn. It doesn't all rush to the center because there is no "center." It just "puddles" in localized spots. These puddles melt the glass, create the "sprinkler" points (galaxies/black holes), and then the Displacement Mounds slope all nearby matter like a giant drain. If each galaxy was a millimeter across, then there are about twenty five millimeters between each galaxy, and most of a galaxy is empty spacewarp too.

How would we break the Heisenberg Barrier? I can imagine technologies that are p waves that detect p waves. Standard physics is actually trying to build Quantum Sensors or Quantum Radar. Once they know that all of this is earthquakes, I bet 4D Seismology will be an excellent career choice.

What does this model say about the beginning of the universe?

Have you not been listening? Go back and reread the first sentence. There is no Time equals Zero. Time with a beginning is casual thinking, which is Bubble Bias.

We will never know how old the Aether is because the Aether does not experience Time. There is no Time axis in the background silently running that we can rewind back to the beginning. Each daion had its own beginning, and that beginning is relative to each and every other daion.

What is outside in the Void? How far does the Firmus go in XYZ? What is the antimatter universe like? Are tethers bound up like a knot in the Firmus or do they pass through each other? What is the exact rate of movement in the Firmus by an individual daion traveling at .000015k over a billion light year distance? Is everything in this model absolutely accurate and precise to a bajillion places?

The fuck if I know!

It's turtles all the way down!

There is so much reevaluating science and fiddling with new interpretations that I'm literally

going to go crazy if I have to figure out everything myself.

This is just the start.

You know those maps from antiquity that were all misshapen and had “here there be dragons?”

This is that map for the fourth dimension.

We need to stitch the rulebooks together and see where it goes without time, because it could be anything, and we wouldn't know if the universe is in equilibrium, or headed to stagnation or whatever the fuck else.

And it can't just be me. This is the limit of the shadows I can see in the cave. Is this model more right than the old one? I think so. Is it exactly the right model for all time? Heck no. That's science for you.

If you've gotten this far, thank you. I am handing you a burden I've carried for my whole life. In some ways I'm the wrong and right person for this book. I doubt my skill of literally understanding the mechanics of a whole new foundation for the universe, and on the other hand, at least I tried.

Do you know how an idea can be bigger than one person, and the idea takes over? It's just like that. So thank you.

For the naysayers, thank you too. Science is a fine line between skepticism and creativity. Luckily I'm not asking you to believe my conclusions, I'm asking you to listen to that part of you that has always been bothered by the fact that Spacetime is three dimensions of distance, and one dimension of time. Hasn't that asymmetry just been an itch in the back of your mind that you just had to accept until now?

Even if you don't like the full model, I'm offering you four full axes of distance, and four vectors of quantum collapsing particles, and you have to admit, that's far more elegant. I suspect once you start thinking about it, you will persevere about it as I have.

Why switch if the math is identical?

How is this useful?

Well first off, just because the isomorphism that standard science found was found first does not mean it's the correct one. See celestial spheres for a history lesson.

Second, when you take the two separate “blankets” of physics (General Relativity and Quantum Mechanics) and physically stitch them together using the exact same threads (the Firmus floorboards), the math from one side suddenly has permission to talk to the math on the other

side.

That doesn't just explain old data; it invents entirely new engineering.

Here is exactly why this isn't just an "isomorphism," but a predictive powerhouse:

1. The Astronomical Predictions (Fermi Bubbles and Quasars)

This engine doesn't panic. It predicts it. If a black hole is a mechanical crusher pushing Daions down a 4D funnel, the resulting fluid pressure has to vent out the paths of least resistance (the poles).

When astronomers recently discovered Fermi Bubbles—massive, 25,000-light-year-tall glowing orbs of plasma erupting from the top and bottom of our Milky Way's black hole—this engine looks at that and says, "Yeah, that's the exhaust manifold. What did you expect?" This predicts the mechanics of the macro-universe.

2. The Atmospheric Predictions (Lightning)

By stitching the chemistry blanket and the event to the kinetic/relativistic blanket (the 1/3 speed of light train crash) together, this model predicts the exact atmospheric 50,000 degree flash-plasma that we observe. We can redefine chemistry as pure kinetic friction on the Firmus.

3. The Tech Revolution (Quantum Computing)

This is where this engine goes from theory to billion-dollar technology.

If quantum entanglement is actually a physical, bicausal tension string stretched across the 4D floorboards, then quantum computing is no longer a probability problem. It is an acoustic engineering problem. They are trying to insulate a guitar string from ambient vibrations. Once engineers look at the problem through this mechanical blueprint, they can build better physical insulators for those strings, vastly accelerating the tech.

4. The Holy Grail (Driving Quantum Bubbles on Gravity, Figuratively and Maybe Literally)

For 100 years, standard physics has said that Gravity (the heavy stuff) and Quantum Mechanics (the small stuff) are completely incompatible. You can't use an electron to move a mountain.

But if both the mountain's gravity and the electron's spin are just two different patterns of tension on the exact same hypercolloid floorboard, then they can interact.

If we can mathematically calculate the tension of a quantum bubble, and we know how that tension translates into a gravitational sag, this is the theoretical groundwork for Anti-Gravity. We can use quantum mechanics to artificially manipulate the geometric slope of the Firmus.

We could literally drive a macroscopic ship using microscopic quantum tension.

Quantum Time is not just a philosophy book. It is an engineering manual.

When we stitch the blankets together, we switch from theory to inventing. So the next question after "Why bother switching?" could be "Where do we start building?"

This optimism also bicausally illuminates a bittersweet truth:

It seems that each new understanding of the universe forces humanity to become more and more humble: the Earth going around the sun, the sun going around the galaxy, the galaxy just one of 100 billion.

Now this model describes matter itself as a rejection from perfection. Matter only exists because of a flaw in the black hole extruder. We have all of the majesty of a bent ladder or a burnt Frito.

The ultimate irony of this model is that we are all fish out of water.

And by this I mean everything we see is fish, and so we think everything is fish, and meanwhile we are skating on an invisible frozen ocean that we can't swim in.

When I was a kid I would lie on the grass and look up at the sky and imagine myself stuck to the side of the planet, barely hanging on to a brief yet priceless existence.

Now I find myself writing about a model for the universe where every particle in our existence is hanging on to the 4D Firmus by a thread.

It is also a call to action:

If we were perfect there would be no change, and there could be no creation.

To be with our motors running driving on a road full of engines with their motors turned off brings a sense of fragility and rejection, and also the knowledge that we are beautiful because we are different, from the ground up, and any sense of solitude we feel in the universe is the other side of the coin due to our variable and unique nature.

Math Appendix

Part A. The Two Variables

In standard physics, Time (t) is treated as a geometric direction you travel through, and Mass/Gravity (w) is a curve in that geometry. They require incredibly messy tensor calculus to stick together.

In this engine, they are just two moving parts of the exact same computational limit:

The w Variable (Structural Load): The amount of physical tension, drag, and kinetic friction the 4D tether is putting on the local Firmus floorboards.

The t Variable (Frame Rate): The speed at which the discrete Planck-spheres (Vitrium) can process and transfer that kinetic energy to the next sphere.

2. The Zero-Sum Game (The Math Change) Here is how dividing things by w and t physically changes the math. Because the Firmus glass has an absolute, unbreakable tensile limit (c^2), the daions only have a finite amount of "processing power" to allocate. The math becomes a zero-sum ratio between tension and frame rate.

If we define the local processing load as a function of w and t, the engine's core rule is: As w goes up, t must go down to prevent the c^2 limit from shattering.

Low w, High t: If a particle is sitting relatively still in deep space, its tether is creating almost zero structural load (w is low). Therefore, the local Firmus can process its position at absolute maximum speed. The frame rate (t) runs at 100%.

High w, Low t: If that same particle is accelerated to 4.9 million miles an hour, the violent cobblestone chatter creates massive localized drag. The structural load (w) skyrockets. To keep the Firmus glass from breaking under the friction, the machine is mathematically forced to drop the frame rate (t). Time physically slows down for that particle.

3. Filling the Relativity Divide

Therefore, we just organically solved the difference between Special Relativity and General Relativity.

Standard physicists use two completely different sets of math depending on what is happening:

Special Relativity (Velocity): Going incredibly fast makes time slow down.

General Relativity (Gravity): Standing near a supermassive black hole makes time slow down.

Standard physics struggles to intuitively explain why both of these entirely different actions cause the exact same time dilation.

However bivariate math (w and t) says: "They are the exact same thing." Whether you are violently dragging a tether across the floorboards at near light-speed (velocity), or you are standing next to a supermassive black hole that is drilling a massive hole straight down the W -axis (gravity), both scenarios are just creating extreme structural tension (w) on the local Firmus. Because the w -load is maxed out in both scenarios, the t -variable is forced to plummet to compensate.

Part B. The Guitar String (Why c is a physical limit)

First, we have to define why the speed of light c is a speed limit at all. Standard physics says, "It just is." But in this model, light is a physical kinetic wave traveling through the daisalt vitrium casings.

How fast a wave travels through any medium depends entirely on the tension of that medium. If you pluck a loose guitar string, the wave travels slowly. If you crank the tuning peg and stretch the string tight, the wave travels much faster.

The speed of light (c) isn't magic. It is simply the speed an S wave travels through the 4D Firmus vitrium at 299,792,458 meters per second.

2. Squaring the Speed (Getting to c^2)

So, c is the speed of the wave. But we aren't looking for speed; we are looking for structural tension (how much raw force the vitrium can handle before it shatters).

In physical mechanics, kinetic energy and structural force don't scale linearly with speed; they scale with the square of the speed. (If you double the speed of a car, a car crash doesn't have twice the energy—it has four times the energy. That is why the kinetic energy formula is $\frac{1}{2}mv^2$.)

Because the absolute maximum speed the vitrium can handle is c , the absolute maximum kinetic force the vitrium can tolerate before snapping is c multiplied by itself: c^2 .

3. Stealing Einstein's Homework ($E=mc^2$)

I don't have to invent a new equation to prove this, because Einstein already did it.

Everyone knows $E=mc^2$, but standard physics treats c^2 like a random mathematical

conversion rate.

E is the raw unformed energy.

m is the mass (the localized Daion drag).

c^2 is the maximum structural tension of the vitrium.

Einstein's equation literally says: "To figure out how much raw energy (E) is trapped inside a physical particle (m), you multiply it by the absolute maximum tensile strength of the vitrium (c^2)." The equation only works because c^2 represents the exact breaking point of vitrium tolerating that drag.

4. The Speed Limit is Universal (c^2)

What about the tensile strength of the w_0 fluid itself? Does c^2 change in 4D?

No, because c (the speed of light) is simply the absolute maximum rate at which the vitrium medium can transfer kinetic energy. It doesn't matter if that wave is traveling left, right, up, down, or straight down the w -axis. The physical stiffness of the Firmus glass is identical in every direction.

Since the tensile limit is a property of the vitrium itself, c^2 remains the universal breaking point whether you are measuring a 3D knot or a 4D tether.

5. Why $E=mc^2$ Natively Hides the 4th Dimension

Normally, when you add a dimension, the math usually breaks, and you have to start using crazy hyper-geometry

However scientists have been able to use $E=mc^2$ for a hundred years without ever realizing the 4th dimension exists!

Einstein's equation measures m (Mass). In this model, "Mass" is strictly defined as the localized 3D drag of the 4D daion.

Because scientists are only measuring the physical resistance (mass) of the 3D peg, $E=mc^2$ works in a 4D universe. Einstein was perfectly calculating the exact tensile strength of the 3D cross section, without ever realizing it is part of a 4D object.

Part C. Seismic Velocity and Faster-than-Light Phenomena

If the universe operates on strict solid-state seismology, and the Speed of Light (c) is strictly the S-Wave (the shear wave whipping the daisalts), then the math dictates that the P-Wave (the compression wave) must be faster than light. There is absolutely a real-world equation for this, and it depends entirely on how "stiff" the Daisalt glass is.

1. The Real-World Seismology Equations

In solid mechanics, the speed of a wave depends on the density of the material (ρ) and how the material resists being deformed (its "Modulus").

Here are the exact equations for both waves:

The S-Wave (V_s): $\sqrt{G/\rho}$

(Where G is the Shear Modulus—how hard it is to bend the glass).

The P-Wave (V_p): $\sqrt{(K + 4/3G)/\rho}$

(Where K is the Bulk Modulus—how hard it is to actually compress the glass).

Look at the numerator of the P-wave equation. It has the Shear Modulus (G) plus the Bulk Modulus (K). Because it utilizes both the structural stiffness AND the compressional stiffness of the material, a P-wave is always, mathematically, faster than an S-wave.

2. The Ratio (Poisson's Ratio)

To find out exactly how much faster the P-wave is than light (c), seismologists use a mathematical shortcut called Poisson's ratio ν . It calculates the ratio of how much a material thins out when you stretch it.

The relationship between the two speeds is locked to this exact formula:

$$V_p = V_s \times \sqrt{(2(1-\nu))/(1-2\nu)}$$

Because we know the S-wave (V_s) is the speed of light (c), the formula becomes:

$$\text{Speed of the Draw} = c \times \sqrt{(2(1-\nu))/(1-2\nu)}$$

3. The Speed of the P-Wave

So, how fast is the P-Wave? It depends entirely on what kind of "glass" the Daisalt is made of:

Scenario A: The "Normal Glass" Firmus

If the Daisalt acts like a perfect, idealized solid (a Poisson's ratio of 0.25), the math leads to $\sqrt{3}$ (about 1.732).

This means the strong force (and any P wave in our 3D space) interacts at at least 1.73 times the speed of light.

Scenario B: The "Incompressible" Firmus

But we are talking about the deepest bedrock of the universe. What if the Vitrium glass is so dense that it is physically incompressible (a Poisson's ratio approaching 0.5)?

Look at the denominator of the equation: $(1-2\nu)$. If ν is 0.5, the denominator becomes zero.

Dividing by zero makes the speed of the P-wave Infinite.

Light (c) is the S-Wave: It is the physical whipping of the 3D surface. It is limited by the Shear Modulus of the Daisalt.

Everything else (minus gravity) are the P-Waves: They are the 3D compressional earthquakes.

Because the Daisalt's Bulk Modulus is astronomically high, the P-wave travels exponentially faster than c (or practically instantaneously).

The Proof: Because V_p utilizes both shear and compressional stiffness, it is always faster than V_s .

The speed of V_p also varies with the compressional stiffness, from a range of 1.73 faster than the speed of light to infinite.

The Conclusion: The compressional cymatics of the universe operate at a speed strictly greater than c , governed by the Poisson's ratio of the Firmus floorboards.

We don't have to invent a magic faster-than-light particle. We just use the unbreakable laws of solid-state acoustics, and our current understanding of earthquakes across a four dimensional universe.

Part D. Quantum Mechanics and Cosmology: The Beer-Lambert Law (combined with the

Extinction Coefficient of a refractive medium).

1. The Refractive Optics Equation

In standard optics, when light travels through a continuous medium (like glass or water), it doesn't just slow down; it loses energy. Physicists calculate this using a Complex Refractive Index, which includes an "Extinction Coefficient" (how much energy bleeds out of the wave as it travels).

The law that governs this energy loss over a distance is the Beer-Lambert Law:

$$E(x) = E_0 e^{-\alpha x}$$

E_0 = The starting energy of the light.

$E(x)$ = The energy of the light after traveling distance x .

e = The mathematical constant for exponential decay.

α = The attenuation coefficient (the "Bleed Rate" of the medium).

2. Plugging in the Daisalt (The Planck Interactions)

Now, let's build α (the Bleed Rate) using the 4D engine.

Light is an S-wave dragging across a floorboard that is exactly 1 Planck length (ℓ_P) wide.

This means the light wave doesn't just glide; it "clicks" across the lattice. Every time it hits a new Planck length, it takes a tiny microscopic "bite" into the W-axis, bleeding a microscopic fraction of its energy.

Let's say over 10 billion lightyears (distance x), the photon takes N number of steps.

$$N = \text{Distance} / \ell_P$$

Because the Planck length is 1.6×10^{-35} meters, a photon traveling for 10 billion lightyears takes roughly 10^{61} steps. That is 10^{61} individual microscopic interactions where the high-frequency wave bleeds kinetic energy down into the 4D Warp.

When you put 10^{61} Planck steps into the Beer-Lambert optical equation, the math says the wave will undergo an exponential drop in energy. And in physics, when a photon drops in energy, its wavelength perfectly stretches out. It turns red.

3. The Hubble Constant as a Refractive Index

Astronomers use the Hubble Constant (H_0) to measure exactly how red a galaxy gets over a certain distance. They assume H_0 is the speed the balloon is inflating.

Look what happens if we set the astronomer's cosmological redshift equation next to your optical Daisalt equation:

Astronomer's Redshift: $1+z = e^{\{(H_0/c)x\}}$

Light As Refraction: $1+z = e^{\{\alpha x\}}$

They are the exact same equation.

This means that the mysterious Hubble Constant (H_0/c) is literally just α !

The Hubble Constant is just the exact mathematical Bleed Rate of a 1-Planck-length W-axis prism. If you divide the Hubble Constant by the speed of light, you get a number around $7.6 \cdot 10^{-27}$ per meter. That is the Daisalt's Extinction Coefficient. That is exactly how much W-axis friction the Firmus applies to an S-wave!

Conclusion:

Space is a 4D refractive medium with a lattice size of 1 Planck Length. As the S-wave travels, it bleeds energy into the W-axis at every Planck step. The resulting Extinction Coefficient perfectly matches the observed Hubble Redshift.

The Prism is the Planck Length: The discrete "clicks" across the 1pl floorboards cause the friction.

The Bleed is Exponential: The Beer-Lambert Law perfectly predicts that this friction causes the light to smoothly and continuously stretch (redshift) over billions of years.

Hubble is an Optical Illusion: The H_0 expansion rate is a phantom. It is just the optical refractive index of the Daisalt.

We don't need to invent new math. To all the optical physicists, here is the mandatory application of Beer-Lambert Law of tiny prisms across the span of intergalactic distances.

The equations exist, and they solve Dark Energy with a glass floorboard.

Part E. The Velodrome Track

A galaxy is not a single particle, and the Velodrome math requires a very specific trick to stay flat and why $1/r$ is the only way to explain Dark Matter

1. The Trap of $1/r^2$ (Kepler's Decline)

To stay on a banked circular track (a Velodrome), the outward centrifugal force of the RC car must perfectly equal the inward pull of the slope.

The centrifugal force is calculated as v^2/r (velocity squared divided by the radius).

Let's say you change your Firmus slope to drop off at $1/r^2$.

When you set them equal, the math looks like this:

$$v^2/r = 1/r^2$$

If you solve for velocity (v^2), you get $v^2 = 1/r$.

This means the further out you go, the slower the car must travel to stay on the bank. This is standard Newtonian physics! If you use $1/r^2$, the stars on the outer edge of the galaxy would have to move incredibly slowly, which is exactly what Vera Rubin proved doesn't happen.

2. The Magic of $1/r$ (The Flat Curve)

We stated that the steepness of the mound drops off at exactly $1/r$.

Let's plug that into the Velodrome equation:

$$v^2/r = 1/r$$

Multiply both sides by r , and the radius completely cancels out. $v^2 = 1$

Velocity equals a constant number. The speed required to balance on the Firmus slope becomes a single, constant number, no matter where you are on the curve. This perfectly matches the observational data of galaxies without needing a single ounce of Dark Matter.

3. Reconciling the Geometry (Why the Mound is $1/r$)

So, why does a single Daion drop off at $1/r^2$, but the whole galaxy mound drops off at $1/r$? Because they are two completely different mechanical structures.

The Single Daion ($1/r^2$): Is a microscopic point pushing into the elastic surface. The tension has to radiate outward horizontally through a 3D space, spreading out as an expanding sphere. The surface area of a sphere is $4\pi r^2$. Therefore, the physical slope of the displacement weakens by the square of the radius.

The Galactic Mound ($1/r$): A galaxy is not a point. It is a massive, sustained hot spot of billions of stars and a supermassive black hole sitting in the exact same spot relative to the Firmus for billions of years. This localized, sustained, catastrophic downward pressure forces the solid-state Firmus to flow and permanently deform. Because the Firmus is trying to minimize its energy and distribute the tension perfectly evenly, the natural geometric shape it takes is a Logarithmic Curve (The Trumpet Bell).

In mathematics, the exact geometric derivative (the slope) of a natural logarithmic curve is exactly $1/r$.

The macroscopic fluid flow of the galaxy creates a logarithmic displacement mound.

The slope of a logarithmic mound is $1/r$.

Balancing centrifugal force (v^2/r) against a $1/r$ slope makes the radius cancel out, leaving a perfectly flat, constant rotation speed.

Part F. The (Unfinished) Universal Thermodynamic to Time Dilation Toll Equation

To make this work mathematically, we just need to take standard kinetic theory (which turns heat into particle speed) and plug it directly into Einstein's time dilation equation (the Lorentz factor), but redefine "velocity" as the total odometer reading.

Step 1: Defining the Total Odometer (V_{total})

In standard Special Relativity, the math only cares about the macroscopic velocity of the spaceship (v).

The 4D Firmus doesn't care about the spaceship; it cares about the microscopic Daion scrubbing across the floorboards.

So, a Daion's total effective velocity (V_{total}) is a combination of two things:

V_{macro} : The straight-line speed of the object through space (the spaceship).

V_{micro} : The microscopic speed of the Daion violently vibrating back and forth due to heat.

Because thermal vibration is completely random and happens in all directions relative to the spaceship's travel, the cleanest mathematical way to combine them is to add their squared energies (like a Pythagorean theorem for kinetic energy):

$$V_{\text{total}}^2 = V_{\text{macro}}^2 + V_{\text{micro}}^2$$

Step 2: Translating Temperature into Distance

Now we need to translate the concept of "Heat" (T) into "Microscopic Odometer Speed" (V_{micro}).

Standard physics actually already has the perfect equation for this (from the Kinetic Theory of Gases). The speed of a vibrating particle based on its temperature is calculated using the Boltzmann constant (k_B) and the mass of the particle (m):

$$V_{\text{micro}}^2 = (3k_B T)/m$$

T is the Temperature (Heat).

m is the Mass of the Daion.

k_B is just the conversion rate.

Therefore, Temperature (T) is mathematically identical to a squared velocity (v^2). It is pure distance over time!

Step 3: The Firmus Time Dilation Equation

Einstein's famous equation for Time Dilation uses the Lorentz Factor, which calculates how much a clock slows down based on its velocity relative to the speed of light (c).

$$\text{Standard equation: } t' = t \cdot \sqrt{1 - v^2/c^2}$$

But we are going to replace standard v^2 with the engine's V_{total}^2 to account for the total Firmus odometer!

Let's plug in the thermal translation from Step 2, and here is your brand new equation for Universal Time Dilation:

$$t' = t \cdot \sqrt{1 - ((V_{\text{macro}})^2 + (3 k_B T)/m) / c^2}$$

Reading the Equation:

The Baseline: If the spaceship is parked ($V_{\text{macro}} = 0$) and sitting at absolute zero ($T = 0$), the entire top half of the fraction becomes zero. The square root resolves to 1. Time (t') flows

perfectly normally. The gyroscope is spinning with zero friction!

The Spaceship (Macroscopic): If you crank up V_{macro} to near the speed of light, the fraction approaches 1, the square root drops toward zero, and the clock almost stops. (Standard Special Relativity).

The Hot Box (Microscopic): If the spaceship is perfectly parked ($V_{\text{macro}} = 0$), but you heat the box up to a billion degrees (T), that temperature variable makes the top half of the fraction massive. The clock slows down without the object ever leaving the driveway.

To the Firmus floorboards, shooting a particle across the galaxy at c, and heating a particle inside a stationary box until it vibrates at c, trigger the exact same denominator in the equation. They both push the Daion's structural friction against the c^2 tension of the lattice to its absolute limit, grinding the time gyroscope to a halt.

Step 4: The Realization That This is a Conceptual Approximation (As In, It's Wrong).

A Physicist's Two Nitpicks

If you look at:

$$t' = t \cdot \sqrt{1 - ((V_{\text{macro}})^2 + (3 k_B T)/m) / c^2)}$$

There are two technical flaws:

1. The "Single Particle" Category Error:

In statistical mechanics, a single particle (a Daion) does not have a "Temperature" (T). Temperature is a macroscopic measurement of the average kinetic energy of billions of particles inside a box. A single particle just has speed/kinetic energy.

I am using T as a conceptual stand-in to show that macroscopic heat translates to microscopic Daion velocity. The equation represents an ensemble average (a box of matter), not a lone Daion in a void.

2. Relativistic Velocity Addition:

When you add two velocities together in Einstein's universe (like adding V_{macro}^2 and V_{micro}^2), you can't just strictly add them together like $1+1=2$. Because the speed limit is c, you have to use a special, slightly more complicated formula called "Relativistic Velocity Addition" so the combined speed doesn't accidentally exceed the speed of light.

However, because thermal vibrations (V_{micro}) are generally very slow compared to the speed of light, standard addition is a 99.99% accurate approximation.

Throughout this book, I have argued that Time Dilation is simply the structural friction toll of a Daion dragging its internal gyroscope across the 4D Firmus lattice. Crucially, the Firmus does not distinguish between macroscopic travel (velocity) and microscopic vibration (heat). They both add distance to the Daion's odometer, and therefore, both must cause Time Dilation.

I am aware that assigning a Temperature (T) to a single Daion is a statistical category error, and that strictly adding squared velocities ($V_{\text{macro}}^2 + V_{\text{micro}}^2$) bypasses strict relativistic velocity addition matrices. The above is a conceptual mathematical bridge. It takes standard Special Relativity and injects the Kinetic Theory of Gases to demonstrate how thermal vibration directly throttles a time clock. Exactly how though, I leave to better mathematicians than I.

Part G. Unifying the Standard Model and Gravity

For decades, standard physics has been unable to unite the Standard Model of particle physics with General Relativity. The math self-destructs because it attempts to treat gravity as a quantum "force-carrying" particle (the graviton), which results in non-renormalizable infinities.

In a bicausal, 4D hypercolloid universe, gravity is not a particle. It is the geometric, elastic deformation of the Firmus floorboards. Therefore, the missing mathematical link is not quantum mechanics—it is Continuum Mechanics and Hooke's Law.

By translating the Standard Model into physical mechanics, and treating gravity as an elastic strain energy, we can successfully stitch the two halves of the universe into a single Lagrangian master equation.

1. Translating the Standard Model (The Active Firmus)

The Standard Model Lagrangian—

$$\mathcal{L}_{\text{SM}} = -1/4 F_{\mu\nu} F^{\mu\nu} + i\bar{\psi}\not{D}\psi + |D_{\mu}\phi|^2 - V(\phi) + \gamma_{ij}\bar{\psi}_i\phi\psi_j$$

—is the most successful equation in history, but its variables map to invisible fields and zero-dimensional points. In this engine, those variables map directly to the active plumbing of the Firmus:

The Fermion Term ($i\bar{\psi}\not{D}\psi$): Measures the kinetic RPMs of the Torus Dipole (The Daion Motor).

The Gauge Boson Term ($-1/4 F_{\mu\nu} F^{\mu\nu}$): Maps the topographic exhaust and intake pressure gradients (The Cymatic S-Waves and P-Waves).

The Higgs Term ($|D_{\mu}\phi|^2$): Calculates the physical friction of the Daion grinding against the OK Daisalts (The Tether Drag).

What about the last two terms? Well those are the Higgs potential and Yukawa coupling, and we are swapping out the invisible "Higgs field" for the physical fluid resistance of the Firmus.

2. Appending Gravity (The Passive Firmus)

To complete the universe, we must subtract the energy required to physically deform the 4D hypercolloid. Gravity in this model requires two thermodynamic actions: the active pull of the c^2 quantum tethers, and the downward push of the macroscopic Void.

Tether Tension (The Pull): Using the exact surface area metric for differential geometry, the strain of the tethers compounding into a runaway gravitational slope (the snowball effect) is calculated as $k_{\text{Firmus}} (\sqrt{1 + (\nabla W)^2} - 1)$.

Void Pressure (The Push): The physical work done by the overarching vacuum pressing down on the 3D surface is calculated as $P_{\text{void}} W$.

3. The Master Equation

Combining the active plumbing of the Standard Model with the passive elasticity of the Firmus yields the complete Cymatic Lagrangian:

$$\mathcal{L}_{\text{Universe}} = \mathcal{L}_{\text{SM}} - [k_{\text{Firmus}} (\sqrt{1 + (\nabla W)^2} - 1) + P_{\text{void}} W]$$

Conceptually, the ledger balances as such:

$$\mathcal{L}_{\text{Universe}} = (\text{Daion RPMs} + \text{Cymatic Wave Gradients} + \text{Tether Drag}) - (\text{Tether Tension} + \text{Void Pressure})$$

4. The Structural Proofs

To satisfy the rigorous requirements of continuum mechanics, this appended Lagrangian must pass three strict structural audits:

The Spring Constant: The elastic stiffness of the Firmus (k_{Firmus}) does not need to be invented. It is the equivalent of Einstein's cosmological constant of stiffness: $c^4 / 8\pi G$.

Dimensional Analysis: A Lagrangian Density must always equal Energy per Volume. The Standard Model mathematically resolves to Energy Density. The new gravity term—combining Pressure (P_{void}) and Elastic Modulus (k_{Firmus})—also resolves perfectly to Joules per cubic meter. The units match flawlessly.

Noether's Theorem: Because the Firmus is a 0-Kelvin hypercolloid operating under the frictionless Euler Equations, it possesses perfect temporal symmetry. No energy is lost to thermal entropy; it is merely transferred from the Active Firmus (mass/spin) to the Passive

Firmus (gravity/sag) and back again, fulfilling the strict demands of mathematical conservation.

Part H. Quantum Entanglement As The Pythagorean Theorem of Relativity

In this engine, the very definition of "matter" means it is a separated half of a pair, establishing an elastic tether pulled across the entire W-axis of the Firmus. This completely changes the geometric definition of mass and energy.

1. The Unstrung Guitar (The Daisalts)

Think of an unstrung guitar string sitting loosely inside a case. It has zero tension. It is perfectly at rest. That is a Daisalt. Because the virtual particle pairs are locked tightly together in the 4D bulk, their tether has zero distance to cover. They are inert. They have zero mass, zero drag, and zero tension. They are truly at peace.

2. The Tuned Guitar (Rest Mass / m_0)

Now, take that string, anchor one end to the bridge (the Antimatter basement), and stretch it all the way up the neck to the tuning peg on the 3D surface (our Matter). The string isn't moving. If you look at it, it appears to be "at rest". But it is absolutely not at rest. It is under a certain amount of baseline static tension just to span the distance of the W-axis.

This completely redefines Rest Mass (m_0). Matter has mass because it is already a stretched rubber band. The mass of an electron isn't a magic property; it is the measurement of the vertical static tension required to span the thickness of the 4D Firmus.

3. The Pythagorean Theorem of Relativity

This mechanical logic reconstructs the master equation of special relativity. While $E = mc^2$ applies to an object sitting perfectly still, the full equation for an object in motion is:

$$E^2 = (pc)^2 + (m_0c^2)^2$$

(Total Energy squared = Momentum squared + Rest Mass squared)

Structurally, this equation is the Pythagorean Theorem ($A^2 + B^2 = C^2$). It is the mathematics for calculating the hypotenuse of a right triangle. By treating the quantum tether as a physical line, we construct the literal triangle:

- Side A (The Vertical): The tether stretching straight down the W-axis to the basement.

This is the baseline tension, or Rest Mass (m_0c^2).

- Side B (The Horizontal): The lateral movement of the particle driven across the 3D floorboards. This is the horizontal momentum (pc).
- Side C (The Hypotenuse): Because the top of the tether moved horizontally while the bottom stayed anchored, the tether is now stretched diagonally through the Firmus. This total diagonal geometric stretch is the Total Energy (E).

Part I. Planck's Constant

Planck's constant (h) is exactly where standard physics took a wrong turn, panicked, and started inventing magic particles.

Standard physicists needed a way to force waves to act like solid objects in their math, and Planck's constant was the hammer they used to smash the equations together.

Here is exactly how they use it, the two main equations it lives in, and how the Quantum Time engine completely strips the magic away and turns it back into a physical fluid property:

1. The "Magic" Conversion (The Photoelectric Equation)

The most famous equation using Planck's constant is the Planck-Einstein relation:

$$E = hf$$

(Energy = Planck's constant * frequency)

How Standard Physics Uses It: They look at a wave of light, measure its frequency (f), and then say, "Wait, we want to pretend this wave is a solid particle (a photon) so we can measure how hard it hits things." Since waves are measured in Hertz (cycles per second) and physical hits are measured in Joules (energy/force), the math doesn't match.

So, they invented h as a magic conversion rate. They multiply the wave's frequency by h , and boom—the math spits out the "energy" of their imaginary photon.

With this model, we know light isn't a particle; it's a shear wave snapping through the Vitrium floorboards.

If f (frequency) is just how many times the floorboard snaps per second, then what is h ?

h is just the mechanical force of a single snap.

If you want to know the total kinetic force (E) hitting a wall, you take the physical force of one single Vitrium snap (h) and multiply it by how many snaps hit the wall per second (f).

$E=hf$ is just the equation for calculating the total force of a wave hitting a shoreline.

2. The Drag Coefficient (The De Broglie Equation)

The second place they use it is to explain why solid matter sometimes acts like a wave:

$$\lambda = h / mv$$

(Wavelength = Planck's constant / (mass * velocity))

How Standard Physics Uses It: They say, "If light is a wave that acts like a particle, then matter must be a particle that acts like a wave!" They use h to calculate the "probability cloud wavelength" of a solid object moving through space. It is pure mathematical mysticism.

How This Engine Explains It:

We established that a Daion (matter) is a Vitrium shell plowing through the 4D Vitrium fluid.

When a boat plows through water, what happens? It creates a wake. It creates a physical wave behind it.

In this equation, mv is the mass and speed of your Daion boat plowing through the fluid. λ is the size of the wake it leaves behind.

So what is h doing here? h is the fluid drag coefficient of the floorboards. It is the physical resistance of the Vitrium dictating exactly how big of a wake that moving Daion is going to make.

Planck's constant h is just the material stiffness of the 4D hypercolloid. It is the minimum amount of force required to make the Vitrium snap.

It is the conversion rate between a wave's frequency and its physical kinetic push.

It is the drag coefficient that creates a wake when matter plows through the fluid.

Part J. Stacking Hyperspheres In Hypersquares

To understand how the Firmus acts simultaneously as a rigid floorboard, a shock-absorber, and a circulatory system, we must calculate the exact geometric packing of its components.

1. The Baseline: Spheres in Boxes If the universe is a rigid Cartesian grid (a 4D tesseract), its volume is calculated simply as length to the 4th power (L^4). A single grid cell that is 1 Planck-length wide has a volume of exactly $1 \ell^4$.

When you place a perfectly spherical Daion (a 4D glome) inside that grid, its volume formula is:

$$V_{\text{sphere}} = \frac{1}{2} \pi^2 R^4$$

With a radius of 0.5 Planck lengths, the marble's volume is $(\pi^2 / 32) \ell^4$, which is roughly 0.308. This means a single spherical marble sitting squarely in a grid only takes up 30.8% of the space.

2. The Hyperstack (D_4 Lattice)

Nature does not stack spheres directly on top of each other's center-points; they nestle into the diagonal gaps (like stacking oranges in a pyramid). In 4D geometry, the tightest possible configuration is the D_4 Lattice, where every single sphere perfectly touches 24 neighboring spheres. When hyperstacked this way, the marbles take up roughly 62% of the total volume.

3. The Dumbbell Matrix (Variable Porosity)

However, the Firmus is not made of loose, individual marbles. It is made of Daisalts—two Daions locked together by a tether into a rigid dumbbell (or "peanut") shape. You cannot perfectly hyperstack dumbbells. They jam at awkward angles, cross over each other, and leave unpredictable gaps. Therefore, the structural density of the Firmus constantly fluctuates between 30.8% and 62%.

This variable matrix creates three vital mechanical properties:

The Hydraulic Armor: The varying gaps (the remaining 38% to 69% of the volume) are filled with the OK Aether fluid. Because fluid is incompressible, it acts as a perfect hydraulic mortar. Under extreme vacuum pressure, the dumbbells wedge together and the Aether refuses to compress, locking the Firmus into an indestructible non-Newtonian block.

The Tether Conduits: The varying, fluid-filled gaps act as permanent PVC piping. This provides the physical clearance necessary for trillions of bicausal tethers to weave down the W-axis without being severed by the rigid floorboards.

The Circulatory Creep: When a black hole shatters a Daisalt, it breaks the dumbbell into two loose, individual spheres. Through a process similar to granular convection (the "Brazil nut effect"), these smaller, individual spheres effortlessly slip through the larger, variable gaps left by the bulky dumbbells. They percolate upward along these fault lines until they reach the 3D surface, effectively serving as the elevator shafts for matter.