Meta-State Cosmological Model: A Narrative

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I. The Meta-State

Before all concepts were born, in that "before" when neither time nor space yet existed, there was an ultimate reality that cannot be defined. It had no boundary, because "beyond the boundary" requires space; it had no beginning, because "before the beginning" requires time. It was the most primordial form of existence itself—the Meta-State.

The Meta-State was not a single entity. It was composed of two entirely distinct yet mutually complementary primordial energies.

One was named *Ji-Kong*. Ji-Kong was not an empty box left behind after everything had been taken away. Ji-Kong itself was a state of pure energy—absolutely empty, absolutely true, infinite nothingness. It was the substrate of all existence, the container in which all "being" could manifest. It held the potential to accommodate all possibilities, like an infinitely spread canvas, waiting yet never needing to be painted.

The other was named *Ji-You*. Ji-You was infinite primordial energy, absolutely dense and absolutely pure. It contained the content of all possibilities and was the ultimate source of all potential energy. The reason Ji-Kong was an energy state rather than pure nothingness had its root of strength in this.

Ji-Kong and Ji-You were not a simple binary of opposites. They were a dual, each the reverse aspect of the other. Ji-Kong's "emptiness" accommodated all possibilities; Ji-You's "density" contained all possibilities. Two faces of a single whole, never separated, never separable. In the form of this dualistic tension, they together constituted that unsurpassable origin—the Meta-State.

On the macroscopic scale, the Meta-State was absolute silence. No time flowing, no space extending, no change occurring. It was eternal tranquility, stillness perfected to its limit.

But on the infinite interface between Ji-Kong and Ji-You, at the most microscopic level, there was a different scene entirely. Two absolutely pure and powerful energy states were in contact with each other, and their interface could never be a mathematically perfect void. Between the two there existed continuous, omnipresent, fleeting energy micro-fluctuations—Ji-Kong attempting to dissolve Ji-You, Ji-You instinctively seeping toward Ji-Kong. The vast majority of these micro-fluctuations were locked down tight by the dualistic tension, arising in an instant, closing in an instant, raising not the faintest ripple.

Silence was the eternal macroscopic background. Micro-fluctuation was the ceaseless whisper upon the interface.

II. The First Net Leakage of Energy

Among the countless micro-fluctuation events over endless ages, the vast majority were merely the "breathing" of the Meta-State—energy surging forth slightly, then retreating back instantly, the equilibrium never truly broken.

Yet, at some unknowable moment, at a thoroughly unremarkable local point upon the interface, a single micro-fluctuation happened to breach that critical potential-energy threshold between Ji-Kong and Ji-You. A strand of Ji-You energy was peeled away, seeping into the domain of Ji-Kong.

This was no world-shattering explosion. It was merely one fleeting "failure to flow back" among billions upon billions of breaths. But this strand of energy discovered it could never go back—the passage behind it had been closed off again by the dualistic tension, and it now found itself in a region of pure emptiness.

This was the first "principal" of the Void. This was the beginning of all stories.

III. The Chaotic Void

After this strand of Ji-You energy entered Ji-Kong, a violent intermingling began.

The Ji-You energy tried to maintain its own purity and density, while the Ji-Kong emptiness tried to dilute and absorb this uninvited guest. Two extreme forces pulled, entangled, and interpenetrated each other, forming a thing that had never existed before—a mass of churning, chaotic energy turbulence interwoven with being and non-being.

It took on an independent form, suspended within the infinite Ji-Kong. This was the first *Chaotic Void*.

At the boundary of this Void cluster, a struggle that continues to this day was already underway. The internal chaotic energy had a natural tendency to expand outward, while the external Ji-Kong emptiness potential compressed inward. On this boundary surface, the two forces achieved a dynamic equilibrium, forming a natural layer of *Potential-Energy Barrier*. This barrier was not a "shell" made of any material substance; it was purely an equilibrium state of energy structure—blocking internal chaotic energy from escaping outward, and blocking external Ji-Kong potential from intruding inward.

Over endless ages, similar micro-fluctuation escape events in different regions of Ji-Kong gave rise to more and more Chaotic Void clusters. Each was independent,

varying in size, emerging successively in the silent Ji-Kong, floating in the boundless.

Inside every Void cluster was a wild and chaotic sea of energy. The interweaving of Ji-You and Ji-Kong produced chaotic turbulence with no unified laws, no fixed forms, shifting unpredictably from moment to moment. And it was precisely this thoroughgoing disorder that held the possibility of deriving all order.

IV. The Gestation of Singularities

Within the ceaselessly churning energy turbulence of the Chaotic Void, energy bodies collided with one another at every moment. The overwhelming majority of collisions either mutually annihilated or mutually deflected. But under extremely rare circumstances, two energy bodies happened to collide into a temporary, minute ordered structure. Such structures were usually fragile beyond measure, vanishing in an instant under the assault of chaos.

Yet, though the probability was infinitesimal, time was endless. In some corner of some Void cluster, one minute ordered structure, before it could be scattered, happened to be struck by a third energy body—which embedded itself into it. Not smashing it apart, but being taken in by the ordered structure, becoming part of it.

This ordered structure grew a little larger. It acquired a slightly greater stability.

A moment later, a fourth energy body was also absorbed by it. Then a fifth. Then a tenth.

Once a certain critical scale was crossed, everything began to accelerate. The more ordered it became, the stronger its attraction for the surrounding chaotic energy; the stronger the attraction, the more energy gathered; the more energy, the faster its ordering process proceeded. This was a self-reinforcing condensation cycle.

This was the birth of a *Singularity*. It was not something designed. It was an

inevitable product of statistical mechanics in the Chaotic Void. As long as there was enough chaotic energy and enough time, somewhere, by chance, such an ordered core would inevitably condense.

The internal structure of each Singularity was unique. It depended on which energy bodies, in what sequence, with what geometric posture, had collided and embedded themselves during the condensation process. This history, which could never be repeated, endowed each Singularity with an exclusive set of "Order." This Order determined all of its subsequent fate.

Deep within the Void, such Singularities formed one after another. Some, having just condensed a small core, were scattered by chaotic turbulence. Some, halfway through condensation, developed contradictions in their internal Order—left-spinning energy and right-spinning energy canceling each other out, self-disintegrating. Only a very few, under the heavy pressure of chaos, held on, absorbing energy in the silence, brewing, accumulating.

They were not "actively" waiting for anything. They were merely pinned down by the immense pressure of the external chaotic energy, bearing it all. Each Singularity had its own unique Order, and therefore its own unique tolerance limit.

V. Successive Eruptions

Across scales of existence too remote to fathom, these Singularities driven deep into chaos, at different times and in different positions, one after another reached their individual tolerance limits.

The pressure came from the never-resting chaotic turbulence of the Void clusters. No matter how solid the ordered structure within a Singularity, it had a critical point. When the external compression surpassed the tolerance of the internal Order—the Singularity was not crushed, but detonated.

This detonation was the creation of a universe.

All the ordered structure accumulated within the Singularity during its long condensation period, all the energy-organization schemes, all the "Order" compressed to its limit, was released in an instant. This release was not a random splashing of energy, but a mandatory unfolding of ordered structure. Like a spring compressed to its limit suddenly released—but what unfolded was not directionless force, but a complete operational logic.

The Singularity unfurled a *Rule-Wall*.

VI. The Rule-Wall and Cosmic Expansion

What was the Rule-Wall?

It was the physical embodiment of the "Order" accumulated within the Singularity. The energy-organization scheme formed during the condensation period was fixed instantaneously, once and for all, as a spherical conversion interface. This interface enclosed a completely new space—a *Bubble Universe*.

From the very first moment of its birth, the Rule-Wall expanded outward with a form resembling a "Big Bang." But its essence was not a single explosive event; it was a continuously operating conversion engine. Its operational logic was simple and forceful:

The outer side of the Rule-Wall contacted the chaotic energy of the Void. This energy was disordered, chaotic, erratic, following no unified laws. After drawing it in, the Rule-Wall subjected it to a mandatory operation—conversion.

Every minimal energy unit, as it passed through the Rule-Wall, was forcibly calibrated—its behavior pattern modified, its kinematic posture disciplined, brought into a rigorous, self-consistent system of rules. This process was clearly discernible at

the microscopic level: one energy state after another being "slapped" into order. But at the macroscopic scale, this action was too rapid to measure. Seen from a distance, one could only observe a smooth spherical front advancing at inconceivable speed.

The converted energy was released from the inner side of the Rule-Wall, becoming ordered mass-energy conforming to the local physical laws, within the interior of the Bubble Universe.

This was precisely the fundamental source of cosmic expansion. The Rule-Wall ceaselessly converted Void energy into internal mass-energy; the continuous increase of internal mass-energy drove the Rule-Wall itself to expand ever outward; and the Rule-Wall's expansion allowed it to contact even more Void energy, continuing the conversion. This was a self-sustaining, self-perpetuating perpetual-motion system.

Because the region surrounding the Singularity was where Void energy density was highest, the conversion rate of the Rule-Wall was most violent in the early phase of the Singularity's eruption. The first batch of converted mass-energy was extremely dense, resembling the Big Bang. This explained why our universe did indeed undergo a period of extreme density and extreme temperature in its very early epoch—but this was not all matter exploding out of the Singularity at once; rather, it was the phase when the Rule-Wall, passing through the high-density Void zone near the Singularity, underwent its most intense conversion.

Thereafter, the Rule-Wall entered a steady-state conversion mode. The chaotic energy of the Void had no unified laws—this form today, that form tomorrow. But once it passed through the Rule-Wall and entered the interior of the Bubble Universe, its fate was locked down—conservation of energy, conservation of momentum, the strengths of fundamental interactions, the curvature of spacetime—everything was strictly governed by the rules fixed at the moment of eruption.

This was why the interior of the universe appeared so ordered. Not because the universe was inherently so, but because the Rule-Wall was continuously translating chaos into order, and then welding that order firmly in place within the wall.

At the propagating boundary of the Rule-Wall, violent conversion reactions with the Void energy were underway. Time flowed far faster there than in the already stable interior regions of the universe. From the interior, observing the edge, one would find the boundary receding outward at a rate far exceeding the interior light speed—this violated no local physical laws, because the Rule-Wall was not moving through interior space, but creating new space within the Void.

VII. The Fates of Myriad Bubbles

Every Singularity eruption declared the birth of a Bubble Universe.

But birth was never equivalent to longevity.

Some Singularities, after erupting, had a Rule-Wall within which a self-contradictory logic was fixed—conversion efficiency too high or too low, or the spacetime structure unable to maintain fundamental stability. Such Bubble Universes collapsed on their own shortly after expanding. Some, in the process of growing larger, had some constant within their internal physical laws begin to drift, triggering chain reactions that caused the entire universe to collapse to zero within an extremely short time. Some conversion products were unable to form any condensed structures, remaining forever a uniform, dead, thin energy fog.

Myriad bubbles, each with its own fate. The overwhelming majority vanished in a fleeting instant.

When a Rule-Wall collapsed and a universe died, the matter of its remains, losing the constraint of its rules, began a long degradation—from order, slowly regressing toward chaos. The timescale required for this process was perhaps longer even than the lifespans of the bubbles themselves. During this period, if the Rule-Wall of another active bubble expanded past this degradation zone, the semi-degraded alien-universe remains were, to the Rule-Wall of that universe, unrecognizable existences. They bore the imprint of the old universe's rules, could not be re-converted, and did not participate in the electromagnetic interactions of the new universe.

To observers in the new universe, this region would be a vast, nearly empty void.

VIII. Our Bubble

Among the countless bubbles born in successive waves, the Rule-Wall of one universe happened to achieve a perfect balance. It had erupted from a Singularity whose internal Order was sufficiently self-consistent and had sufficient tolerance. Its conversion efficiency was gentle and stable, able to continuously convert Void energy into internal mass-energy without being so violent as to tear its own structure apart.

It did not collapse. Did not lapse into dead stillness. Did not disintegrate through self-contradiction.

It expanded steadily, cooled, and structured itself. It endured for over thirteen billion years, becoming the universe we inhabit.

IX. The End of Expansion

However, expansion was not eternal.

Void clusters had a carrying limit. A patch of Void energy could sustain a Bubble Universe only up to a certain macroscopic size. When the Rule-Wall advanced to this limit, the density of convertible Void energy on its exterior was no longer sufficient to sustain continued high-speed expansion.

At this point the Rule-Wall would not vanish. Instead, it would enter a *Breathing State*. At the equilibrium point of the Void's carrying capacity, the advance of the Rule-Wall would come to a rest. It would still be operating, still converting, but its rate and scale would be maintained at a balanced state, no longer growing violently.

Seen from the interior of the universe, the cosmological redshift of the galaxies would begin to slow. The hand driving the expansion of space would at last have rested. Physical constants would remain unchanged, but the childhood and youth of the universe would be over. What followed would be an endless, steady maturity.

X. The Nest of Stars

During the long years of expansion and evolution, the matter injected in the early period began to draw together under the influence of gravity. Subtle density fluctuations became the seeds for all subsequent structures. In some unremarkable corner of the universe, an immense molecular cloud was slowly collapsing.

Gas and dust, drawn by gravity, contracted inward. The temperature and pressure of the core climbed continuously. At the instant the threshold of nuclear fusion was crossed, a star was ignited—the *Sun* was born.

The Sun burned steadily, pouring vast amounts of light and heat in all directions. The residual disk of gas and dust around it condensed under gravity and collisions into celestial bodies great and small. The third rocky planet took shape in the chaos of the early solar system. Its surface was lava and poisonous gas, its sky bombarded continuously by meteorite rain. In a nearly destructive impact, a Mars-sized celestial body struck it at an angle, and the splashed fragments coalesced around the Earth into a satellite.

Earth and Moon, this unique pair, thus came into being.

The Moon stabilized the tilt of Earth's rotation axis, bringing regular tides and a stable climatic rhythm. The tides, drawn by gravitational pull, periodically washed over the coasts, repeatedly scouring minerals from the rocks into the sea. This planet began to acquire a rare stability in the wildness of the solar system.

XI. The Spark of Life

In the shallows of the primordial ocean, under the repeated rise and fall of tides and the sustained irradiation of the Sun, something quietly happened.

Inorganic molecules, catalyzed by energy, chanced to form organic macromolecules capable of self-replication. This first thing that could copy itself was the first thread of life. It was so minuscule as to be less than a grain of dust in a drop of water, but it crossed a threshold—from a purely physicochemical system, it entered the domain of biological evolution.

What followed was billions of years of brutal iteration. Errors in replication produced variation. Limited resources triggered competition. Those that adapted survived; those that did not went extinct. Single cells led to multicellular life, the ocean led to the land, simple stimulus-response led to complex nervous systems. Plants spread across the earth, animals moved through the forests.

Throughout this process, natural catastrophes were never absent. Asteroid impacts, supervolcano eruptions, extreme climatic oscillations—each mass extinction emptied the stage, and the survivors began anew. Dinosaurs ruled the land and sky for over a hundred million years, only to be ended by an asteroid ten kilometers in diameter. The high energy consumption of their vast bodies became a fatal burden in the long impact winter.

But the unremarkable little constant-temperature animals that had hidden beneath the dinosaurs' feet for eons, maintaining a constant body temperature with far lower energy consumption, survived the cold and the hunger. *Mammals* ascended the vacated stage.

XII. The Coming of *Homo sapiens*

Among the lineages of mammals, a branch of primates wove through the forest

canopy. Their eyes were set in the front of their faces, able to judge distance; their fingers could grasp branches with fine coordination. When climate change reduced vast forests to sparse savanna, they were forced to the ground, walking upright on two legs across the wilderness.

Walking upright freed the hands. The flexible use of hands stimulated the development of the brain. A more complex brain gave rise to more complex social cooperation. Social cooperation eventually produced *language*—not simple alarm calls, but language capable of describing "yesterday I saw a lion over by that waterhole" or "this kind of stone sharpens better if you grind it this way."

This was a qualitative leap. Before this, all experience could only be acquired by the individual and died with the individual. Language allowed experience to be transmitted between individuals and accumulated across generations. Each generation did not need to start from zero; they stood on the shoulders of their predecessors.

The brain enlarged continuously over hundreds of thousands of years. Communities became ever more complex, tools ever more refined, understanding of the world ever deeper. Finally, **Homo sapiens** appeared.

The greatest difference between *Homo sapiens* and all other living beings lay not in their bodies, but in that they began to ask "why." Why are there stars in the sky? Why are there day and night? Who are we? Where did all this come from?

They painted on cliff walls, carved symbols on bones, passed down myths around campfires. These stories and symbols were their way of trying to use finite cognition to sketch an infinite world.

Billions of years of evolution, from the eruption of Singularities in the Chaotic Void, to the sustained expansion of the Rule-Wall, to the ignition of an ordinary star in the Milky Way, to the sprouting of the first thread of life in the primordial ocean of Earth—this long chain, spanning scales beyond imagination, at last, in one quiet corner of the universe, produced a species that knew how to lift its head and ask questions.

And among all their questions, there was one, the most fundamental, that had echoed across all civilizations' myths and sciences for thousands of years:

How did all of this, come to be?

This is the Meta-State giving birth to all laws. From the eternal stillness of the Meta-State, to the pair of eyes gazing up at the starry sky in this very moment. From that whisper of a leakage of Ji-You into Ji-Kong, to the ceaseless questioning of intelligence into its own roots.

Begun in the whisper of a fluctuation, come to rest in contemplation.