THE PARADIGM OF THE HELICAL UNIVERSE & THE TRAGEDIES OF MATHEMATICAL DELUSION

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Abstract

Mathematics is a tool to describe the Universe, not the Universe itself. It is a human construct used to approximate and describe nature. A tool, however, is not reality—similar to the philosophical principle that the map is not the territory. Basically, while mathematics serves as a powerful tool for exploring realities beyond human perception, empirical validation remains the final arbiter of physical truth. Theoretical physicists risk becoming dogmatic when they assume that a mathematically consistent equation must exist in nature. So, despite the fact that theoretical physicists and mathematicians have every right to fall in love with beautiful, symmetrical equations, they have to realize that those equations become physically irrelevant if empirical evidence and experiments contradict them, no matter how elegant they may be.

Regrettably, when scientists become too attached to mathematical frameworks, they often dismiss the messy realities of physical observation. For instance, concepts like string theory and the multiverse are abstractly sound but lack experimental verification. Furthermore, abstract geometry can be misleading because it frequently defies physical intuition and visual logic. When geometric concepts are stripped of concrete, three-dimensional reality, they produce counterintuitive paradoxes and physically impossible shapes. Unquestionably, the current crises in astrophysics and cosmology show that relying solely on mathematical symbols and abstract geometry has distanced scientists from observable reality, leading to beautiful theories that explain nothing verifiable. Today, these fields face a deep crisis. Contradictory data from advanced instruments, like the James Webb Space Telescope, the Dark Energy Spectroscopic Instrument (DESI) and many others are directly challenging – if not refuting completely - foundational cosmic models.

In essence, believing that nature must behave a certain way simply because an equation works on paper is a dangerous trap that stalls the progress of physics. Obviously, the fundamental issue within modern theoretical physics and astrophysics is the frequent confusion of abstract mathematical models with observable reality. This conflation has led to a profound misunderstanding of the Sun, stellar physics, and the cosmos as a whole. Ultimately, mathematical delusion can be far more rigid than religious dogma; because mathematics is logically deductive, its conclusions feel absolute—making its frameworks much harder to challenge than traditional dogmas that lack scientific authority. Therefore, it is an absolute imperative to deal with this issue in a proper and fundamental manner.

Nonetheless, a deep and sophisticated analysis shows that all observations and empirical phenomena—from the subatomic to the cosmological scale, including the structure and function of DNA and RNA—can be explained accurately and rationally by the Helical Universe Model and its fundamental concept, the Magnetic Structure of Matter.

PART ONE: THE TRAGEDIES OF MATHEMATICAL DELUSION

The Pseudoscientific Physics & The Discarding of Aether: Most theoretical physicists, if not all of them, believe what Arthur Stanley Eddington the famous English mathematician used to believe: that the processes of mathematics are identical to the processes of nature. This is the root cause of the widespread metaphysical and pseudo-physical theories that are now considered fundamental theories of theoretical physics (1)

Nevertheless, it is absolutely wrong to think that the secrets of the Universe, namely how it was created and how it functions, can be discovered based on mathematical reasoning. Mathematics alone does not represent physical facts. It can only describe the mechanism of physical facts for observed phenomena. Note that these statements do not imply a rejection of the fundamental role of mathematics in physics. Mathematical representation is certainly indispensable to physics, but only if it is accompanied by empirical evidence, directly or indirectly observed. Specifically, theoretical physics models should be constructed based on physical reasoning, which has to be based on observation or empirical evidence. On the other hand, theoretical mathematical models that are based only on mathematical reasoning can best be defined as a flexible spring that can be stretched to infinity without breaking. By choosing the proper initial condition in your mathematical model or equation, you can prove that 1 = 100; all you have to do is divide by zero (since 1 divided by infinity is equal to 100 divided by infinity).

The well-known Lorentz transformation equations, which form the basis of the special theory of relativity, are good examples of how mathematical reasoning is not always a representation of physical fact. While the Lorentz transformation equations are algebraically correct, they are inappropriate from a physics viewpoint because constant terms are not preserved from one coordinate system to another. This link explains well why the Lorentz transformation equations are algebraically correct but physically wrong. Thus, an assumption based solely on mathematical formulas can still be invalid in the domain of physical reality, even if it is mathematically correct. Conversely, no physical model based on empirical evidence contradicts its own mathematical logic or reasoning (2).

All the mess of current theoretical physics was created by mathematical theorists. Just look at the concept of more than three spatial dimensions. Mathematicians would make you think extra dimensions exist and that you can even use a ruler to measure them. Allowing these concepts to enter physics is what led to these ridiculous theories that are now accepted as hardcore physics, such as 'warped space', 'space-time', 'the fabric of space-time', and the nonsensical notions of a parallel universe and multiverse. None of these notions make physical sense, and no physical evidence exists to support them. They exist only in the minds of

theoretical mathematicians. Without a doubt, the domination of mathematicians over the field of theoretical physics has brought the search for physical truths to a standstill.

Since the beginning of the 20th century, our knowledge of astrophysics and cosmology has accelerated backward. Even in the field of subatomic physics, progress has remained severely limited. Regrettably, physicists are mainly to blame for allowing theoretical mathematicians to dominate their discipline. This occurred because they were unable to determine the physical mechanism or cause of gravity. Ultimately, understanding the cause of gravity is impossible without grasping basic physical properties—specifically mass, matter, and the difference between them—two concepts that remain misunderstood even today.

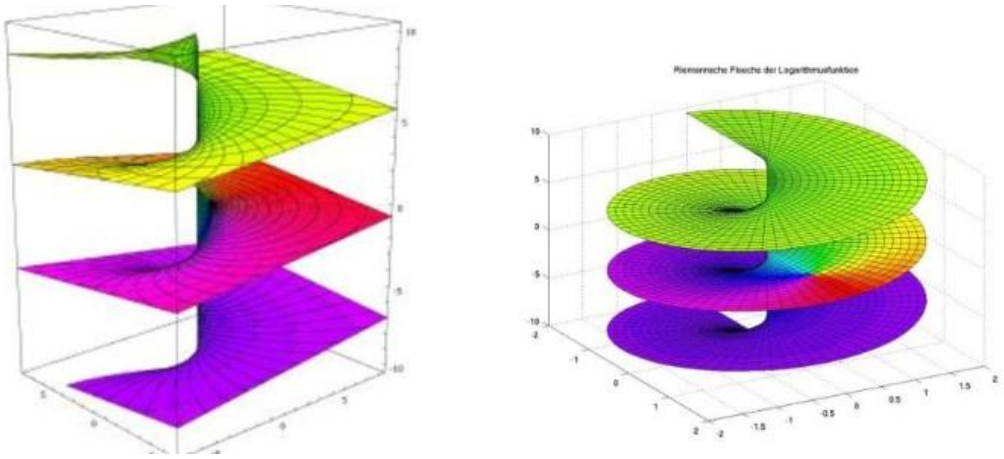
However, without understanding the real building blocks of matter, these two basic properties—mass and matter—gravity cannot be fully comprehended. Moreover, the failure to understand these fundamental physical properties allowed mathematicians to substitute physical facts with probabilistic and metaphysical theories. These theories superficially solved the problems in subatomic physics and astrophysics that Newtonian physics was unable to explain. Specifically, the probabilistic quantum theory was introduced to solve problems in atomic and subatomic physics, while general relativity was intended for astrophysics. Meanwhile, special theory of relativity, with its core assumption of a constant and limited speed of light, aimed to bridge the dilemmas in both fields. Furthermore, in the second half of the 20th century, theoreticians began integrating quantum mechanics with relativity, resulting in new theories that further complicated the dogmatic nature of theoretical physics and paralyzed the search for the truth.

The introduction of quantum mechanics and relativity theories had a detrimental impact on the development of physics. Contrary to prevailing belief, these theories did not resolve the inherent limitations of Newtonian mechanics; rather, they exacerbated them. Had these Newtonian flaws been corrected at the turn of the 20th century, our technological advancements would likely be several orders of magnitude more advanced today, to say nothing of our understanding of stellar physics and the cosmology. Eventually, quantum mechanics and relativity serve as the root causes for highly speculative, metaphysical concepts such as dark matter, dark energy, neutron stars, and black holes.

The conventional theory of stellar gravitational collapse arises from a fundamental misunderstanding of gravity and its role in the structure of matter. When gravity is instead examined through the lens of magnetic architecture, it becomes clear that hypothetical entities like neutron stars and black holes cannot exist; inherent magnetic field configurations naturally maintain structural separation. Furthermore, a failure to comprehend subatomic magnetic dynamics is precisely what necessitated the invention of quantum theory. In physical reality, gravity manifests as a macro-scale, attractive magnetic force that operates over vast distances, remaining weak compared to localized, short-range magnetic forces which exhibit both attractive and repulsive behaviors. Across all scales, magnetic force intensifies as distance decreases and density rises. Consequently, within highly condensed cosmic regions—such as

galactic cores and ultra-dense stellar bodies—as well as at the center of mass of subatomic particles, the magnitude of this magnetic interaction becomes profoundly (mind-boggling) powerful.

The SpaceTime Continuum: The notion of spacetime continuum is an imaginary concept that was first introduced by the mathematician Hermann Minkowski. The original non-Euclidean geometry of Riemann dealt only with space as an amorphous continuum, but Minkowski made it metric. Riemann did not present time as a separate dimension or a new variable; instead, he introduced it only as a supporting notion for his logarithm branch cuts. He utilized the abstract concept of n-dimensional geometry to facilitate the geometric representation of functions of a complex variable, especially logarithm branch cuts. Such research has become a necessity for many parts of mathematics, e.g., for the treatment of many-valued analytical functions (Bernhard Riemann, *On the Hypotheses which lie at the Bases of Geometry*, Nature, Vol. VIII. Nos. 183, 184, pp. 14–17, 36, 37). A branch cut is a curve (with ends possibly open, closed, or half-open) in the complex plane across which an analytic multivalued function is discontinuous (3). For convenience, branch cuts are often taken as lines or line segments. Branch cuts, even those consisting of curves, are also known as cut lines (arfken 1985, p. 397), slits (Kahan 1987), or branch lines. Minkowski's four-dimensional space was transformed by using an imaginary term ($\sqrt{-1}$ c t) instead of the real time t. Therefore, the coordinates of Minkowski's Four-Dimensional Continuum ((X1, X2, X3, X4) are all treated as space coordinates. Originally, they were (X1, X2, X3, $\sqrt{-1}$ c t).



A plot of the multi-valued imaginary part of the complex logarithm function, which shows the branches. As a complex number z goes around the origin, the imaginary part of the logarithm goes up or down. This makes the origin a branch point of the function. Credit: Leonid 2

This imaginary four-dimensional unification of time and space was named 'world' by Minkowski. Minkowski never intended his fourth dimension to be used in curved space; it was meant to consist of Euclidean dimensions (4, 5). Thus, in a physical sense, spacetime as a fourth dimension is nothing more than Minkowski's cerebral and mathematical imagination. Einstein

adapted Minkowski's world and called it the 'Spacetime Continuum'. Furthermore, he applied it to curved, non-Euclidean measurements. But, he did not give any rational reason or physical explanation as to why he did so. In fact, even today, no physicist who believes in Einstein's concept of the 'Spacetime Continuum' can provide an explanation for it. This is how time, for mathematical reasons, became four-dimensional space. This baseless assumption from a physical point of view became the basic theory—or rather the foundation—for the concepts of spacetime curvature and ripples in spacetime. These concepts were further developed into many other pseudo-physics theories, such as relativistic gravitation, which then went on to produce the black hole theory. Furthermore, if there is no such thing as spacetime, but only separate time and space, then the notion of a singularity cannot be proposed. In other words, there is no possibility of space and time expanding from a singularity at the beginning of time.

However, the concept of spatial curvature lacks observational and experimental evidence. While we can discuss curved lines, paths, and surfaces within space, the notion that space itself can be curved lacks both empirical backing and applied mathematical foundations. Thus, in objective reality—as opposed to Einstein's subjective framework—the curvature of space is nothing more than a mathematical pipe dream. In their 1938 book, *The Evolution of Physics*, Einstein and Leopold Infeld noted, "Physical concepts are free creations of the human mind and are not, however it may seem, uniquely determined by the physical world." Ultimately, the concept of spacetime is a free creation of Einstein's mind, rather than a reflection of physical reality (6).

Nikola Tesla characterized the notion of curved spacetime as absurd, delusional, and entirely impossible from a physics point of view. He is correct, and his statements about this concept are the best he ever wrote. "Supposing that the bodies act upon the surrounding space causing curving of the same, it appears to my simple mind that the curved spaces must react on the bodies, and produce the opposite effects, straightening out the curves. Since action and reaction are coexistent, it follows that the supposed curvature of space is entirely impossible. But even if it existed, it would not explain the motions of the bodies as observed. Only the existence of a field of force can account for the motions of the bodies as observed, and its assumption dispenses with space curvature. All literature on this subject is futile and destined to oblivion. So are all attempts to explain the workings of the universe without recognizing the existence of the ether and the indispensable function it plays in the phenomena (7).

However, when discussing the concept of the spacetime continuum, it is crucial to mention that the bending of starlight around the Sun is not an observational evidence that mass curves the spacetime continuum. This phenomenon is actually caused by the deceleration of photons within a non-uniform plasma. Because the plasma in the solar atmosphere is highly non-uniform, this deceleration is particularly pronounced. Such a non-uniform plasma environment disrupts phase synchronization, generates local enhancements of wakefields, and creates stronger gradient-driven balancing forces. Consequently, photons decelerate within the solar atmosphere's plasma, shifting their frequency downward through interactions with dynamic

plasma density gradients. This process should be defined as plasma redshifting, rather than gravitational redshifting.

Plasma shifting is a realistic physical process and an extremely important astrophysical--cosmological mechanism. As photons travel through hot, sparse intergalactic or coronal plasma, they interact simultaneously with numerous free electrons. Instead of standard, single Compton scattering—which significantly alters a photon's direction—this process involves multiple cooperative interactions that cause radiation damping. The photon steadily loses tiny fractions of energy, lowering its frequency (redshifting) while maintaining its forward direction. On the scale of the solar system, this process is vital to the heating of the solar corona, while on the cosmological scale, it serves as an alternative to the expanding Universe (Big Bang) model for galaxy redshifts (8, 9, 10).

So, plasma shifting (both redshifting and blueshifting) is a highly realistic and experimentally verified process. In fact, a wealth of evidence suggests that cosmological redshift is a plasma redshift phenomenon. Data from our solar atmosphere show that plasma redshift—rather than universal expansion—causes photon redshift in space. Because space is a dusty plasma medium instead of an empty vacuum, photons lose energy and momentum as they travel through it. Specifically, when we subtract the redshift caused by the Sun's rotation from the data, we find an unexpected center-to-limb redshift that triples near the edge (limb) of the Sun. This contradicts normal gravitational redshift, which should be the same everywhere. This pattern indicates that photons are losing energy in the Sun's plasma atmosphere (11)

Basically, plasma shifting is a collective plasma-optical mechanism where photons continuously lose or gain energy while their group velocity decreases or increases relative to the surrounding medium. In fact, this perspective shares striking similarities with several real-world, cutting-edge optical and plasma phenomena. Namely, when a pulse of light travels through a plasma wave (like a wakefield), the local electron density changes. This gradient in the refractive index causes the photons to continuously shift their frequency. Depending on where the light sits on the plasma wave, it can either gain energy (blue-shift) or lose energy (red-shift), which simultaneously alters its group velocity relative to the medium (12).

Thus, the phenomenon of plasma shifting is highly relevant both in laboratory laser-plasma interactions (such as Wakefield accelerators) and in astrophysical environments. For example, in high-power laser physics, photon deceleration is an engineered method used to generate single-cycle infrared or terahertz pulses. When an intense laser pulse travels through a plasma, its ponderomotive force pushes electrons aside, creating a trailing electron density wave called a plasma Wakefield. In more detail, the laser-induced Wakefield creates rapid alternating regions of electron density, which translates into a steep, moving refractive index gradient ($\partial\eta/\partial\zeta$). Photons on the front slope of this wake experience a time-dependent, increasing refractive index. This stretches their phase over time, lowering their frequency (ω) and causing a redshift (energy loss). According to the plasma dispersion relation, group velocity

(v_g) depends directly on frequency: $v_g \simeq c\sqrt{1 - \frac{\omega_p^2}{\omega^2}}$. As ω decreases, v_g drops. This causes the redshifted photons to slow down and slide backward into the plasma wake cavity, compression-filtering them into a short, intense pulse (13).

The Tragedy of Discarding the Aether: James Clerk Maxwell's original formulation of electrodynamics, published in his 1861 paper "On Physical Lines of Force" and his 1864 paper "A Dynamical Theory of the Electromagnetic Field," contained 8 core equations (broken down into 20 scalar equations in component form) that explicitly treated the electromagnetic field as a mechanical, elastic Aether composed of molecular vortices (14, 15, 16)

1- Total Current (A): $\boldsymbol{J_{total} = J_{conduction} + \frac{\partial D}{\partial t}}$ (includes the crucial displacement current)
2- Magnetic Force/Potentials (B): $\nabla \times \boldsymbol{A} = \mu H$
3- Ampère's Law (C): $\nabla \times H = \boldsymbol{J_{total}}$
4- Electromotive Force (D): $E = \mu(v \times H) - \frac{\partial A}{\partial t} - \nabla\psi$ (contains terms related to motion through the aether and potentials)
5- Elasticity/Electric Displacement (E): $D = eE$
6- Ohm's Law (F): $E = R\, J_{conduction}$
7- Gauss's Law (G): $\nabla . D = \rho$
8- Continuity Equation (H): $\nabla . J + \frac{\partial \rho}{\partial t} = 0$

Rather than using a standalone term labeled "Aether," Maxwell built his entire mathematical framework on a mechanical model. He envisioned space filled with an elastic, light-bearing medium made of microscopic rotating cells—acting as magnetic vortices—and idle wheel-particles representing electricity. These components transmitted forces tangentially, allowing Maxwell to calculate light propagation as actual transverse shear waves moving through the medium. Ultimately, stress, strain, and displacement were literal mechanical properties of a real aether, offering a tangible, common-sense explanation for how forces travel through space. Regrettably, later in the 1880s and 1890s, Oliver Heaviside, Heinrich Hertz, and Willard Gibbs stripped away Maxwell's mechanical Aether interpretations, quaternions, and potential functions. They reduced the system to the four famous vector equations taught today, shifting the concept from a mechanical strain in a physical medium to independent fields that require no physical medium to exist or propagate (17).

Nevertheless, discarding the Aether was one of the greatest tragedies of 20th-century physics. It opened the doors for all kinds of pseudo-physics notions and physics myths. Definitely, removing the mechanical scaffolding of the Aether stripped the Universe of its physical reality. The working of the Universe cannot be explained on a scientific basis without recognizing the existence of the Aether. But the late Stephen Hawking did not agree with this universal fact, which can be seen by the mind of a real physicist. In his book, *A Brief History of Time*, Hawking wrote that Einstein "cut through the Aether and solved the speed of light problem once and for all." In reality, Oliver Heaviside, Heinrich Hertz, Willard Gibbs, and Einstein introduced the

greatest tragedy to physics. They discarded the most important physical fact about the Universe that makes roughly 99.999% of its physical existence or size. In other words, they discarded the concept of a substance that fills cosmic space and drives the dynamics of the Universe (18, 19).

Did Historical Aether-Drift Experiments Really Produce Null Results? A review of Aether-drift experiments from the late 1800s to today challenges the belief that early physics experiments yielded entirely negative results. Note that, following the shortcoming of the 1887 Michelson-Morley experiment to detect Earth's orbital motion, Michelson proposed a 1904 test to detect Earth's rotation through the Aether. He hypothesized that if the Aether remained fixed, two light rays traveling around the Earth in opposite directions would take different amounts of time due to differences in relative speeds, represented as $(c + \omega)$ and $(c - \omega)$. In 1913, Sagnac first demonstrated this effect with a tabletop experiment, while Michelson and Gale successfully confirmed it on a larger scale in 1925, proving that Earth's rotation could be detected via the speed of light. This experiment was later verified with higher precision globally via satellites in 1985 and using lasers in 1995 (20, 21). However, it is important to point out that Michelson–Morley-type vacuum experiments are unsuitable for detecting Aether drift because they rely on two-way light travel, which cancels out first-order effects. Yet, in 2005, John Stachel claimed that Lorentz explained the null result of the Michelson–Morley experiment by demonstrating that no first-order effects—those proportional to (v/c)—are detectable. Nothing could be further from the truth; this assertion is both misleading and incorrect. Lorentz's theory actually established that first-order terms simply cancel out in experiments that utilize closed light paths (Mansouri & Sexl, 1977). Lorentz noted that first-order problems were relatively simple to solve, whereas second-order effects, such as those in the Michelson–Morley experiment, presented far greater difficulties. Namely, first-order, open-path experiments are superior for detecting the Earth's translational motion because their effects are larger, easier to measure, and unaffected by hypothetical relativistic phenomena like length contraction and time dilation. While historical limitations and inadequate equipment sensitivity—such as in Maxwell's proposed method involving Jupiter's moon Io—previously prevented these tests, modern technology has successfully overcome these barriers. Furthermore, research by Stephan J. G. Gift (2006, 2010) and Levy (2003) demonstrates that in Aether theory, two-way measurements always yield a constant speed of light regardless of the observer's motion, creating an illusion of one-way light speed invariance. In 2006, Gift used the stellar Doppler and Io Rømer effects to detect Earth's orbital motion relative to a solar-bound Aether. This medium corresponds to the Sun-Centered Inertial (SCI) frame—which moves with the Sun around the galaxy without rotating—where light travels at a constant speed. Utilizing interplanetary tracking via signals reflected off planets, this technique confirms Earth's drift through the solar-bound Aether.

Nevertheless, it is not only contradictory but scientifically unacceptable that results from numerous experiments pointing to variations in the speed of light are still interpreted as compatible with special relativity. This long-standing assumption is fundamentally challenged

by the documented existence of the Earth-Centered Inertial (ECI) frame. Because the ECI frame effectively functions as an Earth-bound Aether, it directly contradicts the tenets of special relativity, regardless of how the original experimental fringe shifts are interpreted. In other words, while the Michelson-Morley experiment had its limitations, the Sagnac and Michelson-Gale experiments successfully detected an Aether drift caused by rotation. This supports the concept of an Earth-bound Aether, identified today as the ECI frame. Moving with the Earth without rotating, this frame allows light to travel at a constant speed (c) determined by the vacuum permeability (μ_0) and permittivity (ϵ_0). Consequently, while mainstream physics interprets this setup differently, the ECI frame remains essential for GPS operations, directly challenging special relativity's prohibition of preferred frames. As Buchwald and Thorne (2005) noted, discovering a genuine, non-zero aether drift would cause Einstein's relativity to crumble.

Actually, many experiments claiming null results failed due to flawed premises—namely, assuming the Aether could freely penetrate stone or metal, or that length contraction would mask the drift velocity. While other researchers dismissed positive data because it fell short of the high velocities expected near Earth's surface, Dayton Miller bypassed these limitations by testing a massive interferometer inside a lightweight, thermal shelter. His methodology modeled a cosmic aether-drift dragged by matter, which resulted in a reduced velocity near the Earth's surface. Through this framework, Miller recorded significant positive results across four distinct observational epochs. In fact, Dayton Miller's ether-drift experiments (1906–1929) and subsequent replications suggest a substantive, dynamic cosmological ether that possesses mass, interacts with matter, and exhibits altitude-dependent Earth-entrainment. This dynamic model challenges both static and stagnant Aether theories. Instead, it aligns with Wilhelm Reich's bioenergetic research and Giorgio Piccardi's chemical studies, both of which identified a metal- reflective, self-attracting energy continuum characterized by spiral motions. Ultimately, modern fluctuations currently attributed to "Dark Matter Wind" closely mirror these historic findings, strengthening the evidence for a dynamic cosmological aether. Einstein acknowledged the gravity of these findings, conceding that if Miller's data were accurate, the theory of relativity would be invalidated. Yet, despite the acknowledgment of Einstein himself, contemporary proponents of relativity marginalized the Aether-drift evidence through public skepticism and institutional influence—specifically, through public ridicule and political tactics. A later critique by Shankland et al., published after the original experimenters could no longer defend their work, claimed to refute Miller's Mount Wilson data; however, subsequent re-evaluations of that critique revealed that its data did not support its own negative conclusions (22, 23).

The discourse surrounding the cosmic Aether continues into the contemporary era, where it encounters systemic resistance within mainstream scientific frameworks. Although proponents contend that modern instrumentation provides data supporting Aether models, major peer-reviewed journals consistently reject manuscripts that challenge the established cosmological consensus. Consequently, institutional gatekeeping is often critiqued for resisting paradigm shifts in favor of orthodox theories, potentially marginalizing emerging literature on an Aether-

based universe. This perspective is informed by a series of late 20th- and early 21st-century experiments. Historically, even the 1887 Michelson-Morley experiment—frequently criticized by proponents as structurally unsuitable for Aether detection—registered a marginal positive shift, which Dayton Miller later sought to expand upon during his 1920s research at Mount Wilson. On the other hand, modern empirical approaches have transitioned to utilizing orthogonal electromagnetic resonators to test for light-speed anisotropy induced by Earth's rotation and orbital motion. Notably, these contemporary precision measurements have constrained the upper limit of fractional light-speed variation to $\delta c/c < 10^{-17}$. For instance, Galaev and Múnera, carried out radio frequency and light-beam interferometry tests and detected an Aether drift. Specifically, in 2002, Yuri Galaev implemented a rigorous experimental setup to test whether the Aether exists as a material medium for electromagnetic waves (24). He developed and applied a novel, first-order optical method to measure Aether-drift velocity and determine its kinematic viscosity from statistically significant measurements. The study evaluated several key parameters: Aether-drift velocity, kinematic Aether viscosity, and both the sidereal time-dependence and altitude-dependence of the drift velocity above Earth's surface. And, he cross-referenced his findings with historical experiments to evaluate the hypothesis of a natural, material Aether. By analyzing data across diverse geographical locations, measurement methodologies, and electromagnetic frequencies, Galaev demonstrated that Aether-drift effects are observable, consistent, and reproducible. These findings align with the original hypothesis, providing experimental validation for the Aether as the material medium for electromagnetic wave propagation. More significantly, Yuri Galaev's 2002 research demonstrated that the overall negative results of the Michelson-Morley experiment stemmed from unsuitable instruments set-up. He highlighted four global, positive experiments that used diverse measurement methods; their consistent results collectively support the existence of the Aether.

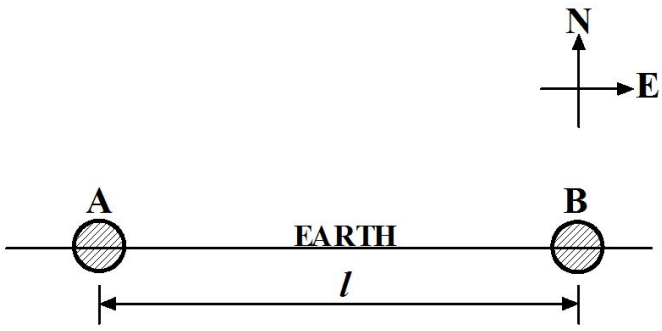
1- optical interferometer of the 2nd order D.C. Miller 1925-1926, USA, Cleveland, Mt Wilson;
2- optical interferometer of the 2nd order A.A. Michelson, F.G. Pease, F. Pearson, 1929, USA, Mt Wilson;
3- radio interferometer of the 1st order Yu. M. Galaev, 1998-1999, Ukraine, Kharkov;
4- optical interferometer of the 1st order Yu.M.Galaev, 2001-2002, Ukraine, Kharkov.

Definitely, Yuri Galaev's research provided objective experimental data supporting the luminiferous Aether hypothesis; however, mainstream physics journals declined to publish his findings. His work was subsequently published in a peer-reviewed journal established around the year 2000, and affiliated with the Research and Technological Institute of Transcription, Translation and Replication in Kharkiv, Ukraine.

Modern Detection Methods Decisively Demonstrate the Existence of the Aether: The Global Positioning System (GPS) is a highly effective tool to show the variability of the speed of light, a central issue for the restoration of scientific rationality to physics. Anyway, by moving away from indirect interferometry, researchers can now utilize GPS to directly measure light travel time differences caused by Earth's rotation. While special relativity dictates that the speed of light remains constant on a rotating Earth—predicting no east-west time differences from

Aether drift—proving this required a direct measurement of one-way travel times between two fixed points, similar to the experiment by Allen et al. (1992). Several studies challenge the constancy of the speed of light by analyzing directional propagation times. Marmet (2000) reported that light signals travel slower eastward from San Francisco to New York than westward. This is supported by Kelly (2005), who found that an eastward GPS signal circumnavigating the equator takes approximately 414 nanoseconds longer than a westward one. Both authors attributed these differences to the Earth's rotation, proposing that light propagates at (c - v) eastward and (c + v) westward relative to the surface. The authors argue these results validate an Earth-Centered Inertial (ECI) or Aether frame, while directly contradicting special relativity's postulate of an invariant speed of light. Note that, this finding aligns with James Clerk Maxwell's 1875 observation (cited in Bethell, 2009) that comparing opposing surface-level light velocities could reveal the Earth's speed relative to the Aether.

Indubitably, GPS offers an innovative framework for detecting Aether drift. Official specifications state that GPS signals travel in straight lines at a constant speed (c) within the Earth-Centered Inertial (ECI) frame (IS-GPS-200E, 2010). This constant speed is utilized in the GPS range equation to pinpoint positions and precisely synchronize both stationary and moving atomic clocks globally (Ashby, 2003; Xu, 2007). Building on this framework, a 2021 study 606e0590d8a1c (2).pdf provided further evidence for a cosmic Aether by reviewing modern GPS data regarding Aether drift across Earth's rotational and orbital motions. By using GPS-synchronized clocks to measure light travel times, the study demonstrates that light travels faster westward than eastward. Notably, these westward and eastward drift variations are a direct component of geomagnetic secular variation, which is driven by fluid motions and hydromagnetic waves in Earth's outer core. This asymmetry suggests a preferred, Earth-bound Aether within the ECI frame—a finding supported by a modified Michelson-Morley experiment and satellite Time Transfer technology. Furthermore, data from interplanetary spacecraft modeled in the Sun-Centered Inertial (SCI) frame confirm light-speed variations driven by Earth's orbital motion. So, modern tests using the Global Positioning System (GPS) and interplanetary tracking have successfully measured variations in the speed of light (clear evidence of an Aether medium).



GPS Clocks A and B at fixed positions on Earth

The main points of modern methods for detecting the luminiferous Aether can be summarized as follows:

1- First-order tests detect an Earth-bound Aether (the Earth-Centered Inertial or ECI frame) caused by the Earth's rotation, aligning with past findings from the Michelson-Gale and Sagnac experiments.
2- New tracking technology has detected a solar-bound Aether (the Sun-Centered Inertial or SCI frame) caused by the Earth's orbit around the Sun—a motion that the famous 1887 Michelson-Morley experiment failed to find, but was previously noted via Roemer and Doppler effects.
3- All the above findings, backed by historical theories of an all-pervasive light-transmission medium, should lead to the rejection of the relativistic worldview (Einstein's relativity) and spark a new era in physics.

In summary, the assertion that modern detection methods, particularly the Global Positioning System (GPS), decisively demonstrate the existence of the aether challenges over a century of mainstream physics by re-examining the constancy of the speed of light. The author argues that the operational reality of GPS tracking—which relies on precise timing corrections—reveals an anisotropy in light propagation relative to moving receivers (resembling a Sagnac effect on a global scale). From this perspective, the successful synchronization of the satellite network does not confirm the absolute, frame-independent constancy of light speed posited by Special Relativity, but rather serves as a highly effective tool to show the variability of the speed of light relative to an earth-centered inertial frame. Ultimately, utilizing modern satellite telemetry to question established relativistic paradigms represents a fundamental effort toward the restoration of scientific rationality to physics. By interpreting empirical GPS data as evidence for an absolute reference frame or an aether-like medium, this argument bridges historical ether theories with advanced 21st-century technology. While standard physics continues to model these phenomena within the framework of General and Special Relativity using specific coordinate choices, the ongoing debate highlights how modern precision technology can be leveraged to re-evaluate the foundational mechanics of our universe.

Core Concepts Summary:

Element	Relativistic Paradigm	Aether-Based Interpretation (The Provided Topic)
Speed of Light (C)	Constant in all inertial frames.	Variable/anisotropic relative to the observer's motion.
GPS Corrections	Accounted for via relativity and a Sagnac effect.	Viewed as empirical proof of an absolute earth-centered frame.
Scientific Objective	Maintaining mathematical notions within spacetime frameworks.	Restoring classical rationality and absolute frameworks to physics.

PART TWO: THE PARADIGM OF THE HELICAL UNIVERSE

Introduction

The Helical Universe model—driven by the Magnetic Structure of Matter—proposes that the fundamental substance of the cosmos is entirely magnetic. In this paradigm, traditional electric charges and particle classifications are replaced by magnetic interactions. Every physical entity, force, and subatomic particle is simply a manifestation of this single magnetic substance operating in three states: ***Positive and Negative States***: Defined by the directionality and orientation of helical propagation (unipolar or directional magnetic flows). ***Neutral Entities***: A structurally balanced coupling of opposite helical movements that cancels out net external polarity. At the subatomic level, the Universe's building blocks are ***Helical Monopole Pairs***—magnetic monopoles in opposing (clockwise and counterclockwise) helical motion. Ultimately, all physical entities and their interactions are defined entirely by how these helical flows twist, align, and balance.

However, the assertion that mass is distinct from matter serves as a core philosophical and one of the physical pillars of the Helical Universe Model. The author argues that mainstream theoretical physics suffers from fundamental flaws because it routinely conflates the mathematical concept of mass with the physical building blocks of matter. Namely, the model teaches that the properties of mass and matter are distinct and can only be understood through micro-magnetic dynamics. Matter is inherently magnetic, exhibiting interactions that are non-linear and non-isotropic. Within this framework, this distinction operates under several key principles: Specifically, the model posits that the Universe is not driven by gravitational collapse or abstract spacetime curvature. Instead, magnetic force is the foundational element of matter itself. In this model, matter represents the underlying physical, electromagnetic, and helical structures, whereas mass is an intrinsic property possessed by all particles—including those traditionally deemed massless by standard physics, such as photons. Furthermore, Shrair's cosmology rejects the mass-energy equation ($E= mc^2$) and its interpretation, which claims mass is converted into energy (as assumed in mainstream stellar thermonuclear models). Instead, the author contends that stars like the Sun are externally powered systems that convert energy into mass.

By decoupling mass from matter, this framework eliminates the necessity for concepts like dark matter, dark energy, or the Big Bang theory, viewing them as mathematical fictions designed to correct a misunderstood foundation. Ultimately, the Helical Universe model presents an absolutely unified, highly ordered cosmos driven and shaped entirely by magnetic forces acting across all physical scales. Nonetheless, the core concepts of the Helical Universe model can be highlighted as follows:

Rejection of Gravity-Dominated Physics: The author argues that modern astrophysics is built on a fundamental misunderstanding of gravity and mass. In this model, gravity is not a primary force mediated by space-time warping or gravitons; rather, it is a long-range manifestation of the underlying magnetic force.

Interconnected Helical Architecture: The model views the Universe as a complex network of interconnected, multi-scale helical structures. From subatomic particles to the largest galactic filaments, everything moves and organizes itself in spiraling, vortex-like geometries governed by magnetic fields.

Field Strength and Visibility: The denser the mass and the more intense the resulting magnetic field, the more pronounced, stable, and clearly visible the helical geometry becomes. A prime example is found in spiral and super-spiral galaxies that host active galactic nuclei (AGN). Because these galaxies contain central supermassive magnetic fields capable of accreting surrounding galactic material, their helical geometry is significantly more pronounced.

Rejecting the Notion of Magnetic Reconnection: The Helical Universe Model rejects the concept of magnetic reconnection on the grounds that it violates Maxwell's equations and represents what the model considers a fundamentally flawed, "pseudophysical" interpretation of electromagnetism.

According to classical electromagnetism (Maxwell's equations), magnetic fields are solenoidal—meaning they must always form continuous, closed loops (Gauss's law for magnetism). The founder of the Helical Universe Model argues that the standard model of magnetic reconnection relies on the concept of "open" magnetic field lines that can sever, snap, and break apart to form entirely new configurations. Specifically, the idea that field lines can behave like physical ropes that break and reconnect is a mathematical fiction since field lines are not real physical entities.

In fact, this critique challenges mainstream astrophysics, where plasma physics operates under the principle of ideal Magnetohydrodynamics (MHD) and magnetic fields are considered "frozen into" the plasma fluid. Mainstream astrophysics suggests reconnection occurs when non-ideal effects break this condition in thin localized regions. Yet, the Helical Universe Model argues that mainstream astrophysics misinterprets plasma interactions and invents non-ideal, specialized zones (like reconnection layers) as an artificial fix designed to patch over fundamental defects in standard solar and cosmological models.

Despite the fact that magnetic reconnection is deeply flawed and unrealistic, mainstream science utilizes it to explain explosive solar flares, coronal mass ejections (CMEs), and the heating of the solar corona. However, under the Helical Universe framework, the author replaces this mechanism entirely. He posits that the universe is inherently structured by an absolute unity of helical magnetic vortices. In his view, high-energy cosmic explosions and solar

behaviors are not caused by local magnetic lines breaking and converting stored energy. Instead, they are driven by the interaction of celestial bodies with external galactic magnetic fields, high-voltage cosmic inputs, and the fundamental magnetic structure of all matter.

Elimination of Cosmic Metaphysics: Because magnetic field arrangements naturally dictate spacing and repulsion, Shrair argues that mainstream concepts like gravitational collapse, black holes, neutron stars, dark matter, and dark energy are mathematical fabrications. Phenomena typically attributed to dark matter or black holes are explained instead as the energetic output and rotational influence of high-density magnetic cores.

Cosmic Accelerators: Instead of black holes at the centers of galaxies, the model posits super-dense regions of intense magnetic field interactions. These galactic cores act as cosmic accelerators, driving the rotational speed of the galaxy and accelerating both charged and neutral particles to extreme velocities. At some galactic cores, especially the extremely dense ones, velocities of emitted particles far exceed the so-called cosmic speed limit.

Micro-to-Macro Consistency: The variable spinning velocity is a basic feature and it is not limited to large cosmic bodies; the model dictates that all matter—from subatomic particles, including photons, to entire galaxies—is composed of magnetic charges moving in opposing helical trajectories. The variance in their specific left- or right-handed rotation velocities ultimately dictates their net charge and physical properties. By introducing variable speeds for physical entities, the model provides rational explanations for phenomena such as superluminal motion in quasars and galactic rotation curves, eliminating the need for dark matter or dark energy. Traditional astrophysics relies on these hypothetical constructs because it lacks these fundamental physical insights, whereas this framework replaces gravity-dominant paradigms with one powered by fundamental magnetic forces.

Stellar and Cosmic Explosions are Externally Driven Events: According to Shrair's Helical Universe framework, cosmic and stellar explosions (such as supernovae and solar flares) are not caused by internal gravitational collapse or the depletion of nuclear fuel, but are instead triggered and driven by external magnetic fields and universal electromagnetic dynamics. Instead of a star exploding due to internal pressures or running out of fuel, Shrair's model suggests that external cosmic factors dictate these stellar anomalies. Powerful, dynamic external magnetic fields and the influx of Galactic Cosmic Rays (GCRs) interact with the star's magnetic structure. This interaction creates high-energy magnetic scattering, causing the energetic outbursts observed as stellar explosions. This topic is detailed extensively in the research article. The Universe is Magnetically Dynamic with Cosmic Explosions Driven by External Magnetic Fields | Opast Publishing Group

The Fundamental Concepts of the Magnetic Structure of Matter: Shrair's framework rests heavily or rather exclusively on the premise that magnetism is the literal building block of all

matter. In other words, magnetism is not just a secondary force generated by moving charges, but the primary substance and foundational foundation of physical reality.

Origin of Mass and Charge: The theory posits that real magnetic charges are the most elementary form of matter. Specifically, the fundamental building blocks of matter consist of a pair of identical magnetic charges rotating together in opposite helical paths (one clockwise and one counter-clockwise). Instead of viewing mass and electric charge as intrinsic properties of abstract point particles, this model suggests that subatomic particles are formed by combinations of these helical rotations. Consequently, a higher number of left-handed rotations creates a negatively charged particle, while a higher number of right-handed rotations creates a positively charged particle.

Magnetic Permanence in Atoms: At the subatomic level, the fundamental building blocks of matter possess a permanently active magnetic force. The author argues that mainstream quantum mechanics serves merely as an overly mathematical placeholder—a framework that arose because twentieth-century physicists failed to comprehend how micro-magnetic fields dictate the structure and behavior of atoms and particles.

Magnetic forces across both short and long ranges exert complete dominance over cosmic dynamics. Within Shrair's physical paradigm, standard electrostatic equations (e.g., pure Coulomb calculations) are adapted to integrate magnetized scattering, illustrating the mechanisms by which external magnetic field geometries manipulate charged-particle trajectories into characteristic helical or S-shaped pathways.

Dynamic Unity: Energy transport, cosmic explosions, and fluctuations in stellar luminosity are driven neither by localized internal fusion nor by random, isolated events. Instead, they result from the continuous interaction and adjustment of external magnetic fields as they pass through macro- and micro-structures.

The Helical Universe Is an Isolated System but Can Never Reach Thermodynamic Equilibrium: It is extremely important to point out that the Helical Universe is an isolated system that can never reach thermodynamic equilibrium due to continuous electromagnetic and matter recycling processes. This perspective dismisses mainstream thermodynamic assumptions about cosmic decline and "heat death." The core tenets of this model regarding thermodynamics include: The Role of Constant Recycling: In standard thermodynamics, an isolated system inevitably approaches maximum entropy, resulting in a state of thermal equilibrium where no usable work can be extracted. However, Shrair’s model argues that the universe circumvents this "cosmic slide" through perpetual matter-energy transformations. Celestial processes continuously break down and reorganize matter, effectively rejuvenating the system and preventing it from flattening out into a dead, uniform state.

Primary Magnetic and Plasma Forces: Unlike mainstream cosmology, which relies heavily on gravitational collapse and general relativity, Shrair posits that magnetic fields and plasma physics dominate cosmic scales. Because plasma makes up the vast majority of the visible

universe, its directional, short-range, and long-range magnetic interactions create a self-organizing structure. These electromagnetic forces provide the architecture needed to continually process energy without experiencing standard entropic breakdown.

A Non-Linear, Dynamic Geometry: The helical nature of the model implies that cosmic motion is a continuous vortex rather than a static box or an expanding flat plane. Because everything moves dynamically along changing helical paths relative to other components, localized states of thermodynamic equilibrium can never become global. The system remains perpetually out of absolute equilibrium, functioning more like a living, self-regulating organism than a mechanical clock winding down.

Summary Comparison Table

Conceptual Category	Mainstream Standard Cosmology	Jamal Shrair's Helical Universe Model
Primary Organizing Force	**Gravity** (Space-time curvature via General Relativity)	**Magnetic Force** (Permanently active at all scales)
Geometric Paths of Motion	Elliptical orbits / Linear displacements through space	**Continuous Helical Trajectories** / Vortices
Galactic Cores	**Supermassive Black Holes** (Gravitational singularities)	**High-Density Magnetic Cores** (Cosmic accelerators)
Subatomic Reality	Quantum Mechanics (Probabilistic wave-particle duality)	**Micro-Magnetic Structures** (Ordered magnetic building blocks)
Unexplained Anomalies	Explained via and **Dark Matter Dark Energy**	Explained via & dynamic magnetic fields **Helical Energy Flows**
Physical Nature	Abstract, intrinsic property (similar to electric charge).	Physical, geometric rotation of a concrete structure.
Particle Structure	Zero-dimensional point particle (no spatial extension or internal volume).	Three-dimensional helical structure or extended shape.
Mechanism of Spin	Not physical rotation. If a point particle physically rotated at its radius limit to	Actual spinning motion. Shrair explicitly embraces hyper-luminal speeds,

	match its measured angular momentum, its surface would have to move faster than the speed of light.	arguing the electron spins at roughly 4.1 × 10^{12} cm/s (about 137 times the speed of light).
Mathematical Framework	Managed via **Quantum Mechanics** (SU(2) symmetry groups, Dirac equation, and wavefunctions).	Managed via **classical/deterministic mechanics** applied to spatial geometries and helical pathways.

The Rejection of Pure Abstract Mathematics: The cosmological framework of the Helical Universe model explicitly rejects pure abstract mathematics as a tool for discovering the fundamental physical truths. The author argues that modern theoretical physics has stagnated by treating abstract equations as equivalent to physical reality—a flaw attributed to a historical overreliance on mathematical reasoning over empirical observation. To counter this flawed foundation, the proposed model advocates a return to deterministic, classical physics where all phenomena, across all scales, are governed by the geometric arrangements of subatomic magnetic fields. Consequently, to maintain this focus on empirical reality, the framework bypasses standard quantum operator algebra. It is instead formulated through classical vector fields, spatial geometry, and fluid-like macroscopic constraints. This framework transitions the geometry from standard 2D polar coordinates to 3D cylindrical coordinates and vector kinematics over time. Specifically, the mathematical representation relies on classical helical geometray, magnetohydrodynamics (MHD), and non-standard field equations.

Classical Vector Fields $\vec{B}$: Unlike quantum mechanics which relies on intrinsic, non-physical parameters (s = ½), Shrair model treats magnetism as an absolute, permanent physical force inherently bolted onto the building blocks of matter. Mathematically, every fundamental particle is represented as a source of a classical **magnetic field vector** $\vec{B}(\vec{r}) = \frac{\mu_0}{4\pi}\left(\frac{3(\vec{m}\cdot\hat{r})\hat{r}-\vec{m}}{r^3}\right)$, where $\vec{m}$ is a fixed, physical magnetic dipole moment rather than a probabilistic quantum state.

Spatial Geometry and Volume Changes (ΔV): The author explicitly mentions that his structural hypotheses can be calculated mathematically in direct relation to volume changes and geometric configurations. Forces such as gravity or nuclear binding are modeled as a net attraction or repulsion of these localized field geometries packing together, while the energy density u_B of the dense matter is tracked via the magnetic pressure equation: $P_B = \frac{B^2}{2\mu_0}$. When particles aggregate, the total energy change is mapped to the physical volume displacement (ΔV) of interacting field lines rather than abstract metric tensors.

Continuous Hydrodynamic and Determinstic Flux Laws: To model cosmic scales (such as solar dynamic and stellar behaviors), Shrair utilizes classical magnetohydrodynamics (MHD) and

deterministic flux equations while stripping out standard dynamo components like magnetic reconnection. The mathematical propagation relies heavily on: Gauss's Law for Magnetism:

$\nabla . \vec{B} = 0$ (Ensuring that magnetic fields always maintain strict physical continuity and loops, which Shrair argues prevents gravitational collapse into black holes), while Ampere's Law: $\nabla \times \vec{B} = \mu_0 \vec{J}$ (Mapping structural fields directly to physical current densities $\vec{J}$

Dynamics Driven by Ultra-Intense Central Magnetic Cores: Mainstream astrophysics balances galactic rotation curves using dark matter or supermassive black holes, but Shrair Model rejects these concepts completely and replaces them with ultra-intense magnetic field regions at galactic centers. The total force F governing a celestail body of mass m and effective chrage/plasma characteristics in this model transitions away from purely gravitational metrics toward a generalized Lorentz – type electromagnetic force and plasma interaction:

$$F = \boldsymbol{F_{grav}} + \boldsymbol{F_{mag}} = -\frac{GMm}{r^2}\,\hat{r} + q\,(v \times B)$$

B: The localized cosmic magnetic field tensor/vector determined by the central core.

q: The net electro-plasma coupling coefficient of the celestial body or stellar plasma stream.

Under Shrair's principle, the galactic spin rate is proportional to the core magnetic field intensity: $\omega \propto \|B_{core}\|^n$

Mainstream physics introduces dark matter to compensate for the insufficient gravitational pull required to keep fast-moving outer stars bound to a galaxy. However, the Helical model resolves this discrepancy through an entirely different mechanism. Instead of hosting a supermassive black hole, the galactic core is proposed to be a dense, exceptionally powerful magnetic field. Stars, stellar systems, and interstellar material are not bound solely by Newtonian gravity; instead, they are magnetically coupled to one another and tethered to this central magnetic engine.

Consequently, the flat rotation curve ceases to be a mystery. Because these magnetic forces are driven by Vector field lines and currents flowing across the galactic disk, the force acting on outer stars does not decay as rapidly as gravity. Instead, stars follow helical orbits dictated by the galaxy's overarching magnetic field, where a stronger core magnetic flux density results in faster rotation and more extended spiral arms. Ultimately, the Shrair model explains galactic rotation curves without invoking dark matter. Specifically, by treating the Universe as an interconnected, magnetically ordered web rather than isolated masses in a vacuum, the model naturally accounts for the high orbital velocities at the galactic periphery.

Galactic Centers as Thermodynamic Engines in the Helical Universe: The recycling of energy within galactic centers is a foundational tenet of the Helical Universe Model, demonstrating

strict alignment with the laws of thermodynamics. These centers function as cosmic magnetic engines that accrete matter, emit high-energy radiation, and expel powerful jets of magnetic energy. Namely, as cosmological material infalls toward the central magnetic region, mechanical energies are converted into kinetic energy and thermal dissipation via friction, collisions, and electrical currents. This process directly exemplifies the First Law of Thermodynamics, as energy is never destroyed but merely changes form; the incoming energy is transformed into radiant luminosity and mechanical work through jet ejection. These jets subsequently drive cosmic material back into the host galaxy, regulating star formation and sustaining the energetic lifecycle. However, this recycling mechanism is inherently inefficient, adhering to the Second Law of Thermodynamics through the substantial amount of entropy generated during accretion and radiated into the cosmos. Furthermore, because these galactic-scale thermodynamic systems never reach absolute zero, they remain fully consistent with the Third Law of Thermodynamics.

The Magnetic Structure of Matter Formulation: This principle asserts that subatomic particles and macroscopic bodies inherit their structural limits from intrinsic magnetic dipoles and aligned electron properties, rather than from gravitational mass accumulation alone. Within advanced unified frameworks, the structural state |ψ> of matter distribution is governed by hierarchical control networks. By replacing purely mass-driven paradigms with these intrinsic electromagnetic properties, the model establishes a geometric foundation for matter, defined by a discrete, network-driven topology. This architecture operates under the following structural principles:

1- Network Topology as Directed Graphs: In this framework, matter distribution is not a continuous background. Instead, it is modeled as a directed graph (G = (V, E)) Where, Vertices (V): Represent discrete physical states or localized magnetic dipole configurations. Edges (E): Represent the directed, recursive interaction pathways between those states. Hierarchy: The control networks operate across scales, meaning macroscopic bodies inherit their structural limits directly from the underlying subatomic network configurations.

2- The Local Boundary Constraint: The recursive interactions within these directed graphs are strictly bounded by the localized space and time constraint: $\Delta t \times \Delta r = \kappa$ Where: Δt represents the discrete temporal step or duration of the interaction. Δr: represents the spatial extent or displacement of the local interaction. κ: is a fundamental coupling constant specific to the Shrair-UFT framework, mapping the structural limit where magnetic alignment stabilizes into physical geometry. It defines the allowable structural limits of matter-energy distribution. If an interaction exceeds this bound, the network topology must restructure, preventing arbitrary mass-energy accumulation without corresponding magnetic alignment.

3- Electrodynamic Framework-Magnetic Fields & Chirality: Because Shrair's model emphasizes that matter is not separate from energy and is heavily rooted in electromagnetic dynamics, the helical architecture requires a force-free magnetic field formulation (a key concept in plasma astrophysics). Mathematically, this is expressed

using the Beltrami condition: $\nabla \times \mathbf{B} = \alpha \mathbf{B}$ Where: **B** is the magnetic field vector and α is a scalar factor determining the chirality (handedness) of the system. In a cylindrical coordinate system (r, ∅, z), a simple solution satisfying this helical architecture is the **Lundquist field:** $B_r = 0, \quad B_\emptyset = B_0 J_1(\alpha r), B_z = B_0 J_0(\alpha r)$ (where J_0 and J_1 are Bessel functions, naturally representing a dense, magnetic spiraling center).

4- **Helical Trajectories and Centripetal Radiation:** In this framework, all structures from photons to galaxies move in nested helical orbits governed by universal magnetic ordering. The mathematical representation of a photon or emitter moving along a helix involves: An axial velocity (v_z) and a tangential rotational velocity ($v_\emptyset$). Nonetheless, when light is emitted by matter trapped in these high-velocity centripetal systems, the Lorentz transformations manifest as structural frequency shifts. The apparent redshift (z) observed from Earth is mathematically modeled as an accumulation of localized Doppler/magnetic scattering interactions as the light travels along its complex, helical path.

Why the Helical Universe Model Considers E = mc² Wrong? The Helical Universe Model rejects (E=mc^2) as fundamentally incorrect. Within this framework, the equation is viewed as an invalid mathematical abstraction born out of relativistic mechanics and Quantum Electrodynamics (QED)—both of which the author completely dismisses. Instead, the model proposes a non-relativistic Universe driven purely by classical electromagnetism and an active medium known as the Aether. By rejecting the space-time abstractions of special relativity, the author invalidates the Lorentz transformation factor $\gamma = \frac{1}{\sqrt{1-\frac{v^2}{c^2}}}$.

According to the current physics paradigm, as an object's velocity (v) approaches the speed of light ($v \rightarrow c$), the Lorentz factor, γ approaches infinity. This implies that an infinite amount of energy is required to accelerate a massive object to the speed of light. However, the author rejects this assumption, emphasizing that while the Lorentz transformation equations are algebraically correct, they are physically invalid. He argues that mainstream physics mistakes mathematical constructs for physical reality. In his view, the cosmic "speed limit" is not caused by mass dynamically increasing toward infinity, but rather by physical resistance—specifically magnetic drag—from an underlying medium or Aether through which the particle moves. Consequently, his framework discards mainstream physical concepts he deems fallacious, such as virtual particles, relativistic mass inflation, and the mathematical symmetries of the standard model.

The Misinterpretation of Mass and Energy: While the relativistic framework posits that mass and energy are interchangeable forms of the same entity, the author argues that mass is an intrinsic property determined strictly by the subatomic magnetic structure of matter. From this perspective, mass cannot simply dissolve into pure, abstract energy, nor can abstract energy materialize into mass without specific magnetic interactions. He points out that the energy conversion observed in nuclear reactions is a reconfiguration of magnetic potential energy and field structures, rather than the literal destruction of mass as defined by Einstein.

The Rejection of Empty Space-Time: Einstein's derivation relies heavily on the premise that the speed of light is a universal constant in a vacuum. However, Shrair argues that space is 99.99% filled with an active Aether, characterized as a magnetic plasma or medium. Because a true vacuum does not exist, treating (c) as an absolute geometric constant within the structure of space-time is mathematically flawed. Consequently, since the underlying premise of a metric space-time is rejected, any equation utilizing c^2as a fundamental space-time conversion factor is deemed incorrect.

Invalidation of the Relativistic Energy-Momentum Relation: In standard physics, (E=mc^2) is a special case of the broader relativistic energy-momentum relation: $E^2 = (PC)^2 + (mc)^2)^2$. The author argues that this entire mathematical structure is invalid. Furthermore, he contends that the experiments traditionally cited as proof of relativistic mechanics—such as the Kaufmann–Bucherer–Neumann experiments—do not prove that mass varies with velocity. Instead, he asserts that the data merely expose a contradiction between the Lorentz force law and Newton's second law of motion. So, by removing the Lorentz factor γ, the mathematical foundation that allows mass to scale relativistically or equate to energy completely collapses (25).

The Argument of Energy Inflation at High Velocities: The author applies his model to particle accelerators like CERN's Large Hadron Collider (LHC). In standard physics, the energy of a proton traveling near the speed of light is calculated via relativistic equations to be **6.5 TeV**. The author argues that this energy is mathematically inflated by a factor of roughly **15,000**. According to his non-relativistic, helical framework, the true kinetic and intrinsic energy values of these protons amount to only about **470 MeV**. He maintains that assigning inflated electron-volt values to particles based on (E=mc^2) calculations yields entirely fictitious results.

Virtual Particles and Mathematical Symmetries Rejected: In modern quantum field theory, (E=mc^2) allows for the brief materialization of virtual particles out of the vacuum via the uncertainty principle. The author points out that Feynman diagrams and the Quark Model depend entirely on these non-physical entities. Conversely, the Helical Universe model defines mass as a real, structurally determined property resulting from dynamic, helical magnetic structures—not as a currency exchangeable with energy. Because the author views space-time as a magnetically active environment rather than a physical, bendable 4D fabric, equations that bridge mass to the geometry of spacetime via energy-momentum tensors ($T_{\mu\nu}$) are treated as mathematical artifacts rather than physical realities. So, while (E=mc^2) is universally considered a cornerstone of theoretical physics, Jamal Shrair's Helical Universe model rejects this formula on two fronts. First, it argues that the derivation relies on circular logic by assuming relativity to prove relativistic mass-energy. Second, it contends that the predicted physical phenomena can be mathematically downscaled to standard, non-relativistic electrodynamics.

Variation in the Speed of Light: Shrair's Helical Universe model utilizes classical Galilean-Newtonian transformations, treating time (t) and distance (x) as absolute, independent quantities. In contrast, mainstream physics views space and time as a unified, four-dimensional

spacetime fabric where time dilates and space contracts based on velocity. Furthermore, while the mainstream model describes light propagation as a wave-particle duality moving through a vacuum, the Helical Universe model treats light as physical particles whose speed can exceed (c) by millions of times at emission, - Strictly in the dense parts of the Universe - gradually slowing down through mechanical interactions with cosmic media like plasma, dust, and magnetic fields.

However, the logical mathematical extension of Shrair's framework based on Galilean-Newtonian mechanics, the relationship between the observed distance traveled x(t) and the variable velocity v(x, t) from the moment of emission t_0 to a later time (t) is expressed via classical integration: $x(t) = x_0 + \int_{t_0}^{t} v(x, \tau)\mathrm{d}\tau$

Substituting the velocity equation into this distance formula highlights the core mechanics of the Helical Universe model: $x(t) = x_0 + v_0(t - t_0) - \int_{t_0}^{t}(\int_{t_0}^{\tau} a_{decel}(B, \rho)\mathrm{d}t')\,\mathrm{d}\tau$

If an observer moves at a velocity v_{obs} relative to the cosmic medium, the measured speed of light is simply additive or subtractive $v_{measured} = v(x, t) \pm v_{obs}$), directly contradicting the constancy of the speed of light central to special relativity. Furthermore, Shrair's framework underscores a critical issue regarding a variable cosmic distance scale. Namely, because light slows down when encountering dense cosmic media, signals originating from deep space regions with strong magnetic fields (B) or dense plasma (ρ) take longer to arrive. Within this framework, an object's distance cannot be reliably calculated using the standard constant (c). In other words, highly compact, magnetically structured celestial bodies generate localized potential wells that cause light to lose energy and shift frequency as it escapes. This localized shift mimics the redshift normally attributed to billions of light-years of distance, meaning the object could be much closer to Earth than traditional values imply. Finally, by treating photons as classical ballistic particles, the model removes the universal speed limit, allowing for superluminal propagation at the source ($v_0 \gg c$). So, by introducing a variable speed of light, the model provides rational explanations for phenomena such as superluminal motion in quasars and solving the galactic rotation curves problem, without relying on concepts like dark matter or dark energy.

Mathematical Core Mechanics of the Centrally Powered Helical Universe Model: To mathematically represent the core mechanics of Jamal Shrair's centrally powered Helical Universe model, you must translate his conceptual reliance on plasma dynamics, structured currents, and central electromagnetic engines into the formalisms of Magnetohydrodynamics (MHD), cylindrical vector fields, and force-free field configurations. Here is how a centrally powered, helical electrodynamic cosmology is formalized mathematically. Cylindrical Helical Geometry and Vector Fields: In Shrair's model, energy and matter flow along helical trajectories. Using cylindrical coordinates (r, θ, z), a steady-state helical velocity field (v) or

magnetic field (B) radiating outward and winding around a central axis (z) is defined by its components:

$$\mathrm{B}\,(\mathrm{r}) = B_r(\mathrm{r})\hat{\mathrm{r}} + B_\theta(\mathrm{r})\hat{\Theta} + B_z(\mathrm{r})\hat{\mathrm{z}}$$

For a pure, tightly wound helical flow where pitch is tightly regulated by a central engine, the relationship between the azimuthal (winding) component and the axial component is defined by the pitch angle α(r): $\tan\alpha(\mathrm{r}) = \frac{B_{\theta(r)}}{B_{z(r)}}$

The Central Power Source (The Electromagnetic Engine): Instead of a gravitational singularity, Shrair proposes a high-energy, magneto-plasma core. Mathematically, this central engine acts as a localized source of magnetic flux ($\emptyset_M$) and current**(I)** at r→0

The total axial current (I_z) emanating from the central power source and flowing through a cross-sectional radius (r) is derived from Ampère's Law:

$$I_z(\mathrm{r}) = \int_0^r \mathrm{J}.\,dA = \frac{2\pi r}{\mu_0} B_\theta(\mathrm{r})$$

Where (J) is the current density and μ_0 is the vacuum permeability. This indicates that the azimuthal magnetic field $\mathrm{B}_\theta$is directly sustained by the central engine's axial current output.

Force-Free Magnetic Fields (Birkeland Currents): Because Shrair's model emphasizes stable, self-confining cosmic structures over vast distances, the plasma configurations must mathematically satisfy the force-free field condition. This occurs when the magnetic Lorentz force vanishes (J X B =0), meaning the electric current flows parallel to the magnetic field vectors: $\mathrm{J} = \nabla \times B = \alpha$ (r)B Where $\alpha(r)$ is a scalar function. For a constant α (a linear force-free field), taking the curl of both sides yields the Helmholtz equation: $\nabla^2\mathrm{B} + \alpha^2\mathrm{B} = 0$

In cylindrical geometry, the solution for a centrally powered, stable helical current filament (a Birkeland current) is expressed using Lundquist solutions (Bessel functions): $B_z(\mathrm{r}) = B_0\,\mathrm{J}_0(\alpha r)$, $\mathrm{B}_\theta(\mathrm{r}) = B_0\,\mathrm{J}_1(\alpha r)$, $B_r(\mathrm{r}) = 0$, J_0 and J_1 are zeroth and first-order Ordinary Bessel functions, and $\mathrm{B}_0 =$ represents the magnetic field strength at the central axis determined by the power source.

Energy Propagation and the Poynting Vector: A centrally powered system implies that energy flows outward from the core to drive the helical rotation of the surrounding cosmos. The directional flow of this electromagnetic energy is quantified by the Poynting Vector (S):

$$s = \frac{1}{\mu_0}(E \times B)$$

In a highly conductive moving substance – a liquid or plasma - (ideal MHD), the electric field is induced by motion:

$E = -(V \times B)$. Substituting this into the Poynting vector yields: $S = \frac{1}{\mu_0}[(v \cdot B)B - B^2 v]$

To mathematically balance Shrair's concept of an actively powered cosmos, the divergence of the Poynting vector must equal the work done on the plasma plus thermal losses ($J \cdot E$):

$$\nabla . S = -J . E$$

Centrally Powered Attenuation (Radial Decay): Because the system is centrally powered, the intensity of the electromagnetic fields must decay as you move radially outward (r) from the central axis. To account for a 3D expanding plasma or liquid medium powered from the center, a 1/r or $1/r^2$ attenuation factor is mapped onto the helical components to ensure conservation of energy away from the source:

$$B(r, \theta, z) = \frac{B_0}{r}[\sin(\kappa z - \omega t)\hat{\theta} + \cos(\kappa z - \omega t)\hat{z}$$

Where: κ is the spatial wavenumber of the helical twist. ω is the angular frequency of the central engine's rotation or pulsation.

Comparison: Standard Cosmology vs. Shrair's Mathematical Framework

Feature	Standard Cosmology (GR-Based)	Shrair's Helical Model (MHD-Based)
Governing Equation	Einstein Field Equations ($G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu}$)	Ideal MHD & Helmholtz Equ. ($\nabla \times B = \alpha B$)
Primary Metric	Isotropic FLRW Metric ($ds^2 = -c^2 dt^2 + a(t)^2 d\Sigma^2$)	Cylindrical Coordinates ($ds^2 = dr^2 + r^2 d\theta^2 + dz^2$)
Central Driver	Gravitational Singularity / Spacetime Curvature	Magneto-plasma engine / Axial Current Density (I_z)
Energy Transport	Dark Energy / Cosmic Expansion	Poynting Flux Divergence ($\nabla . S$)

Externally Powered Celestial Bodies (Stars & Planets): According to the proposed Helical model, stars and planets are externally powered via electromagnetic interactions, rather than by internal nuclear fusion (traditional gravity-dominated models). However, to express Shrair's qualitative concept – that the Sun transmits energy and drives the Earth's rotation and orbit through external unipolar and dipolar magnetic field couplings – using established physical

equations, you must combine principles of magnetohydrodynamics (MHD), Poynting energy flux, and Lorentz forces:

External Energy Transfer (Poynting Flux): To represent how the Earth' externally powered by the Sun's magnetic field, the energy transfer per unit area is governed by the Poynting Vector (S). This calculates the directional energy flux of an electromagnetic field:

$$S = \frac{1}{\mu_0} (E \times B)$$

Where, B is the total magnetic field vector at the Earth's position (the vector sum of the Sun's interplanatry magnetic field B_{Sun} and the Earth's magnetosphere B_{Earth}). E is the induced electric field generated by the solar wind plasma moving past the Earth ($E = - V_{sw} \times B_{Sun}$) μ_0 is the permeability of free space

Rotational and Orbital Dynamics (Lorentz Force): Shrair's model suggests that the Earth's axial spin and orbital rotation are driven by an external unipolar magnetic field acting in coordination with internal dipole. The net force (F) exerted on a charged planetary body or its surrounding magnetospheric currents is represented by the volume integral of the Lorentz Force:

$$F = \int_v (\boldsymbol{\rho_e} E + J \times B) \, dV$$

Where: J is the current density passing through the Earth's ionosphere and magnetosphere

$$(J = \boldsymbol{\sigma}(E + v \times B))$$

$\boldsymbol{\sigma_e}$ is the charge density.

v is the velocity of the Earth relative to the magnetic field

The mechanical torque (τ) responisble for driving the Earth's rotation (axial spin) via this external magnetic coupling is modeled as:

$$\boldsymbol{\tau} = \int_v (\boldsymbol{r} \times (\boldsymbol{J} \times B)) \, dV$$

Magnetic Interaction Model (Dipole-Unipolar Coupling): Because the framework treats the interaction as a combination of short-range dipole fields and long-range unipolar induction, it can be represented mathenatically through Spherical Harmonic Analysis (SHA). The total magnetic potential (V) splits into internal (terrestrial) and external (solar/magnetospheric) coefficients:

$$V(r,\theta, \emptyset) = a \sum_{l=1}^{\infty} \sum_{m=0}^{l} [(\frac{a}{r})^{l+1} (\boldsymbol{g_l}^{m} \cos m\emptyset + \boldsymbol{h_l^m} \sin m\emptyset) + (\frac{r}{a})^{l} (\boldsymbol{q_l^m} \cos m\emptyset + \boldsymbol{S_l^m} \sin m\emptyset)]$$

Where g_l^m , h_l^m represent the internal dipole forces, while q_l^m, S_l^m represent the external solar-driven magnetic forces.

Helical Universe Model Vs. Birkeland Current Model: The Helical Universe model, paired with its Magnetic Structure of Matter concept, fundamentally departs from standard Birkeland current equations by prioritizing intrinsic, structural magnetic forces over moving electric currents. While both models reject gravity-dominated mainstream astrophysics, they conceptualize the underlying electromagnetic mechanisms through distinct physical frameworks.

In conventional plasma physics—as articulated in the models of Hannes Alfvén and Donald Scott—a Birkeland current is defined as a field-aligned electric current. Here, the characteristic helical morphology emerges as a dynamic consequence of moving charges that generate a self-magnetic field, which subsequently compresses the plasma filament via the Z-pinch effect. Conversely, Shrair posits that the absolute unity and geometry of the Universe derive from an intrinsic magnetic force inherent to the fundamental building blocks of matter. Within this paradigm, cosmic bodies do not merely exist within an external electrical circuit; rather, their helical trajectories manifest the intrinsic magnetic architecture of matter itself.

Furthermore, standard Birkeland current dynamics rely mathematically on Maxwell's equations solved for force-free fields ($\nabla \times B = \alpha B$). This mathematical formulation yields Bessel functions, which dictate that a Birkeland current consists of nested, coaxial cylindrical shells wherein the current and magnetic fields periodically reverse direction. Shrair's model replaces this electrodynamic fluid framework with a Unified Field Theory (UFT) framework. Instead of conceptualizing space as a network of free-flowing, coaxial electrical conduits, this model views cosmic structures, such as the solar core, as localized helical magnetic vortex systems that actively process and convert energy rather than serving as passive electrical channels. Consequently, while standard Electric Universe paradigms depict stars as externally powered entities plugged into galactic current streams, Shrair is modifying this view by asserting that they function as inherently magnetic systems rather than mere conduits for external currents.

In essence, Shrair's Helical Universe model contrasts with standard Birkeland current equations by redefining magnetism from a passive byproduct of plasma dynamics into an intrinsic structural building block of matter. The primary differences can be summarized as follows:

Standard Birkeland equations rely on magnetohydrodynamics (MHD) and field-aligned, force-free currents. In this framework, parallel current density and magnetic fields minimize electromagnetic stress to maintain a "dark mode" equilibrium state (26).

Shrair's Model rejects standard MHD concepts like "frozen-in" magnetic fields and magnetic reconnection. Instead of treating helical structures as mere minimal-energy paths for plasma,

Shrair posits that magnetic force is a fundamental, self-sustaining structural constant of cosmic matter.

Mathematical Representation: (Dynamic Geometry vs. Linear Bessel Functions): Standard Birkeland equations are modeled using cylindrical coordinates and Bessel functions, creating a system of embedded cylindrical shells. Within these layers, current directions and magnetic fields alternate based entirely on radial distance.

Shrair's Model rejects Euclidean constraints and standard parametric mathematics for cosmic structures. Instead, it describes interconnected helical systems governed by non-linear, fractal geometries linked to universal constants (e.g., the Fibonacci sequence), arguing that conventional equations oversimplify the multi-fluidic nature of space.

Cosmic Mechanism: (Cosmic Circuit vs. Universal Architecture): Standard Birkeland equations treats Birkeland currents as cosmic "cables" or "flux ropes" that transfer energy and charge between celestial bodies, such as Earth's ionosphere and the solar wind.

Shrair's Model views these structures as the core architectural framework dictating the creation, spin, and grouping of all celestial bodies. Rather than plasma moving through an independent geometry, the helical configuration is an inseparable property of the matter itself.

The comparison between the Helical Universe Model and the Birkeland Current Model is summed up in the table below.

Feature	Standard Birkeland Current Equations	Shrair's Helical Universe / Magnetic Structure
Primary Driver	Electric Current (J): Moving plasma filaments generate magnetic fields.	Intrinsic Magnetic Force: Permanent magnetic properties inherent to the building blocks of matter.
Mathematical Basis	Bessel Functions: Force-free, field-aligned cylinder solutions (Lundquist/Scott models).	Vortex & Closed Field Equations: Unified Field Theory focused on structural coherence and magnetic field changes.
The Role of Plasma	Primary: Plasma is the conductor allowing currents to flow across space.	Secondary: Matter and plasma condense *due* to preexisting magnetic structures.

Structure Geometry	Coaxial Cylinders: Alternating, counter-rotating concentric shells of electric current.	Magnetic Vortex Systems: Interconnected, unified helical lines anchoring cosmic objects like the Sun.

Condensed Matter Stars in the Helical Universe: The relationship between condensed matter stars and the Helical Universe model is defined by an absolute rejection of mainstream spacetime geometry in favor of classical electrodynamics, structural topology, and fractal scaling. Rather than utilizing the tensor calculus of Einstein's General Relativity—which the author argues introduces metaphysical myths like black holes and neutron stars—this model relies on a non-standard plasma physics approach. Specifically, the connection between condensed matter stars and the proposed helical universal framework is structured around three core concepts. 1- The Helical Electromagnetic Scaling Factor: In Shrair's model, the motion of all celestial bodies is driven by external magnetic fields, acting similarly to a colossal electric motor. Consequently, the mathematical trajectory of both a particle and a star is a helix. 2- Alternative Field Governing Equations: Instead of relying on gravitational field equations ($G_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu}$), the system's interactions are governed by scaled Biot-Savart and Lorentz force equations. The relationship between a micro-scale condensed matter lattice and a macro-scale star is treated as a self-similar fractal scaling law. This is expressed through the Lorentz force formula, F = q(E + v × B), where the magnetic field (B) and velocity (v) vectors are mathematically coupled to a spiral geometry. 3- External Helical Magnetic Confinement: The structural stability of a star does not originate from internal thermal nuclear fusion balancing a gravitational collapse. Instead, it is maintained by external helical magnetic confinement acting directly upon a condensed matter core.

Lattice Geometry Over Gravitational Singularities: Mainstream astrophysics calculates stellar remnants using the Tolman-Oppenheimer-Volkoff (TOV) equation for hydrostatic equilibrium, which predicts that massive stars collapse into infinitely dense points (singularities) if they exceed certain mass limits. Shrair eliminates the TOV equation completely. Mathematically, condensed matter stars are bound by the physics of condensed matter phase lattices. Because the star's core consists of real, incompressible condensed matter, density (ρ) has a strict upper limit defined by atomic/ionic repulsions: $\rho_{max} = \frac{m_{ion}}{V_{lattice}}$. Because Coulombic and magnetic field arrangements always ensure spatial separation, the mathematical probability of a gravitational collapse to a singularity becomes zero ($\lim_{F_{mag}\to\infty} \Delta x \neq 0$).

The Core Scaling Relation (B α ρ): In the Helical Universe model, celestial bodies (including stars and galactic cores) are composed of highly dense, solid, or liquid-state condensed matter rather than gaseous plasma. Mathematically, Shrair posits that the macroscopic magnetic field

strength (B) of a cosmic body is directly proportional to its structural density (ρ) and core temperature (T)

$$B \ \alpha \ \rho . T$$

Because stars and galactic cores are considered dense condensed matter, they act as massive natural permanent magnets. This replaces the standard fluid dynamo equations ($\nabla \times B$) with the mathematics of ferromagnetism and aligned magnetic domains. The alignment of electron dipoles in heavy elements (like iron and nickel) forms the basis of this scaling.

Helical Trajectories and the 1/r Inverse Distance Law: Instead of using Newton's or Einstein's gravitational field equations ($1/r^2$), Shrair's model is assuming that the motion of stars along helical orbits around galactic centers is dictated by magnetic forces. It posits that the interactions between highly energetic condensed-matter structures operate instantaneously and drop off linearly with distance: Force $\alpha \frac{1}{r}$

The geometry of a helical orbit is mathematically defined in cylindrical coordinates (r, θ, z) where a star moves at a constant radius while advancing along an axis:

$$x(t) = R\cos(\omega t),\ Y(t) = R\sin(\omega t),\ z(t) = \nu_z t$$

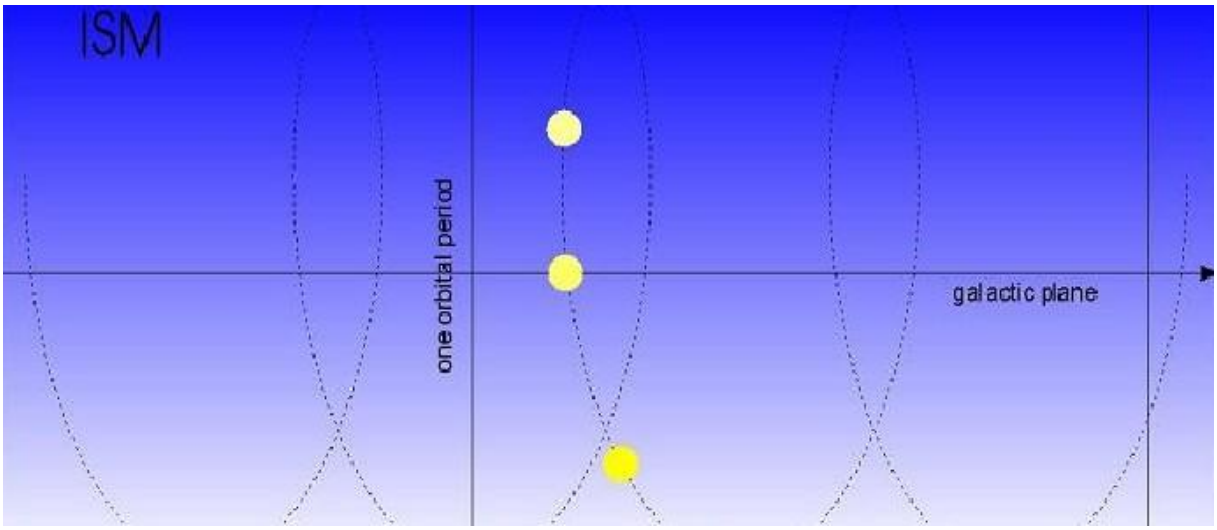
In Shrair's view, this helical motion is mathematically analogous to the rotation of an electric motor's rotor driven by interacting magnetic fields and electric currents. In contrast, while standard solar physics relies on equations for internal thermonuclear fusion driven by core gravitational pressure, Shrair completely rejects this framework. Instead, he asserts that fusion is a short-range magnetic interaction occurring mainly – not exclusively - on the star's condensed-matter surface, such as during solar flares.

The Standard Solar Model Contradicts the Helical Universe Paradigm: The critiques leveled against the Standard Solar Model (SSM) within the framework of the Helical Universe paradigm represent an alternative view rooted in experimental laws of physics. Basically, instead of relying on traditional mathematical frameworks derived from relativity and theoretical physics, this paradigm focuses heavily on what it identifies as qualitative violations of experimental laws and proportional mathematical inconsistencies within the SSM. The primary mathematical arguments and numerical discrepancies highlighted by this model include the following core points: The Convective Motion Magnitude Mismatch: Data obtained by the Solar Dynamics Observatory (SDO) reveals that actual convective velocities—the motions of the solar material within the solar interior—are nearly 100 times smaller than the hydrodynamic expectations built into the SSM. Because the SSM relies on specific differential equations governing convective heat transport (such as mixing-length theory), a factor of 10^2 deficit in convective speed fundamentally undermines the fluid-dynamic equations used to model how energy travels outward from the core (27). Geometrical Inversion of Heat Transfer (Conduction vs.

Radiation): The SSM assumes that the inner solar core is surrounded by a massive radiative zone where energy is transported via photon diffusion, a process governed by mathematical opacity tables. This violates basic thermodynamic and radiation laws. Inside opaque bodies, – and the Sun is opaque through most of its bulk - heat moves through conduction (direct molecular collision) and convection (fluid or material motion) rather than open radiative emission. In other words, in a high-density, highly ionized plasma core, thermal conductivity is mathematically dominated by charged particle interactions (conduction and convection) rather than radiation. A mathematically accurate treatment of this state eliminates the radiative zone entirely, replacing it with an electromagnetically driven, helical conduction-convection model.

Mathematical Over-Parametrization of Neutrino Oscillations: The SSM originally predicted a far higher flux of electron neutrinos than what was experimentally detected on Earth. To resolve this discrepancy, mainstream physics introduced neutrino oscillations (the PMNS matrix) (28 , 29). However, the Helical Universe paradigm views this as an ad-hoc mathematical over-parametrization—an artificial adjustment designed to save a failing model rather than a reflection of true solar physics. It points out a logical and mathematical contradiction: asserting that neutrinos alter their state over distance requires simultaneous spatial measurements (i.e., data from solar detector between the Sun and Earth) to be statistically verified, rendering the current oscillation equations mathematically unfalsifiable assumptions. Non-Isotropic Helical Geometry vs. Spherically Symmetric Equations: The SSM treats the Sun as a spherically symmetric, quasi-static ball of gaseous plasma governed by 1D hydrostatic equilibrium equations: $\frac{dp}{dr} = -\frac{GM(r)\rho(r)}{r^2}$ However, in the Helical Universe model, the solar system travels forward along a helical vortex. Thus, modeling a star using isotropic, purely gravitational equations is mathematically invalid because it completely ignores the massive vector forces introduced by field-aligned currents, electrodynamics, and the macroscopic helical motion of the solar system through the interstellar medium.

Kinematics of Helical Orbits and Spiral Oscillations (Kinematic Parametrization of a Trailing Helix): In Shrair's model, stars (like our Sun) do not move in closed, flat Keplerian ellipses. Instead, they travel along a helical orbit while simultaneously oscillating up and down relative to the galactic plane. The figure below shows this motion. In cylindrical coordinates (r, θ, z), a basic celestial trajectory under this proposed model is represented as: $r(t) = r_0$, $\theta(t) = \omega t$, $z(t) = \nu_z t + A \sin(\Omega t + \phi)$, where ω: The angular velocity of the orbit around the central cosmic core and ν_z: The forward translational velocity of the system through space. $A \sin(\Omega t + \phi)$: The spiral oscillation component, where A is the amplitude of the vertical shift and Ω is the frequency of the oscillation (which Shrair Model associates with macro-cycles).



The up and down oscillation of the Sun relative to the galactic plane. Credit: Jamal Shrair

In Cartesian coordinates (x, y, z), this forms a standard circular helix over time:

$$\mathrm{r(t)} = \begin{pmatrix} x(t) \\ y(t) \\ z(t) \end{pmatrix} = \begin{pmatrix} (Rcos(wt + \theta_0) \\ R\ \sin\ (\mathrm{wt} + \theta_0 \\ v_z t \end{pmatrix}$$

Factoring in Tilt (The Solar Apex Angle): In reality, the planetary orbital plane is tilted relative to the path of the Sun's galactic trajectory by an angle φ (approximately 60^0 in our actual solar system). To model this a rotation matrix R_y (ϕ) is applied to the orbital plane components before adding the forward vector.

$$\mathrm{r\ (t)} = \begin{pmatrix} cos\emptyset & 0 & sin\emptyset \\ 0 & 1 & 0 \\ -sin\emptyset & 0 & cos\emptyset \end{pmatrix} \begin{pmatrix} R\cos(wt) \\ R\sin(wt) \\ 0 \end{pmatrix} + \begin{pmatrix} 0 \\ 0 \\ v_2 t \end{pmatrix}$$

which expands to the exact coordinate mapping: $\mathrm{x(t)} = \mathrm{R\ cos\ (wt)\ cos\ \emptyset}$ $\mathrm{y(t)} = \mathrm{R\ sin\ (wt)}$ $\mathrm{z(t)} = v_2\mathrm{t} - \mathrm{R\ cos(wt)\ sin\ \emptyset}$

Interpretation of Major Cosmological and Physical Phenomena Based on Shrair's Helical Universe Model

In the Helical Universe model, physical phenomena at all scales are explained by shifting the fundamental mechanism of the cosmos away from mainstream gravity and quantum probability toward a unified, multi-scale geometric framework governed entirely by magnetism and spin. So, rather than relying on the mathematical abstractions of the Standard Model of particle physics, the author's framework utilizes a physical, structural approach to subatomic

interactions: **Intrinsic Spin as Geometric Rotation:** In mainstream physics, subatomic spin is treated as an abstract, mathematical property of point-particles. In Shrair's model, **spin is a literal, physical rotation**. The fundamental geometry of the Universe is a corkscrew shape (helix) that scales down recursively from the cosmos to the building blocks of matter. The spin of subatomic particles like electrons and photons is the foundational manifestation of this helical movement. **Elimination of Abstract Forces:** The author rejects conventional explanations, arguing that what we observe as separate forces are different manifestations of long-range and short-range magnetic interactions. And at the subatomic scale, strong and weak nuclear forces are replaced by localized, highly dense magnetic coupling between particles. Particle behavior is dictated by the pairing, structure, and alignment of electrons and their dipoles within atomic sub-shells. **Magnetic Dipole Alignment and Matter Dominance:** The model posits that the subatomic behavior of unpaired electrons and unfilled sub-shells dictates how strongly a material reacts to or generates magnetic fields. Because dense, high-temperature magnetic coupling rules cosmic evolution, the author concludes that heavy elements with uneven electron distributions—specifically Iron, Nickel, and Cobalt—are naturally the dominant elemental building blocks – by mass - of the Universe.

Basically, in Shrair's Helical Universe model, physical phenomena are explained by rejecting the mainstream frameworks of quantum mechanics and relativity. Instead, the model relies on a unified, geometric paradigm where magnetism and rotational geometry govern all physical structures. The model does not use the standard probability equations of mainstream quantum physics. It explains subatomic phenomena through several core principles: 1- **Unified Magnetic Framework (Replacing Gravity and Weak/Strong Forces):** The author posits that standard physics introduces unnecessary mathematical abstractions, such as separate weak and strong nuclear forces or spacetime curvature. In reality, at the subatomic level, nuclear cohesion and electron behavior are governed purely by localized magnetic alignments and dipoles. What mainstream physics calculates as gravity or nuclear forces are actually different structural scales and manifestations of the same fundamental magnetic force. **2- Intrinsic Particle Spin as Helical Geometry:** In mainstream physics, subatomic quantum particles have an abstract mathematical property called spin. In Shrair's helical model, this is replaced by an actual physical, corkscrew-like rotational motion. All basic particles—including electrons and photons—travel along complex, multi-scale helical pathways. The geometric arrangement of these spirals generates the local fields and forces we observe. This physical rotation is what defines a particle's magnetic moment and gives rise to macroscopic physical properties. **3- Rejection of Quantum Probabilities and Exotic States:** Mainstream quantum mechanics relies on probabilistic wave-function collapses and abstract mathematical models. The Helical Universe framework based on strict determinism and causal structural realism. Subatomic particles have exact coordinates, rigid geometric structures, and deterministic movements along helical pathways, rendering probabilistic interpretations obsolete. **4. Reinterpretation of Atomic Properties and Stellar Dynamics:** Material properties (such as why some metals are highly magnetic) are determined strictly by whether subatomic helical dipoles cancel each other out or align symmetrically.

Moreover, the author argues that mainstream, quantum-driven thermonuclear models for stellar fusion are incorrect. He emphasizes that intense subatomic magnetic arrangements—rather than gravitational collapse or quantum tunneling—power stellar phenomena and prevent matter from collapsing into black holes or neutron stars. Furthermore, he asserts with absolute confidence that the exact technical and theoretical details of this process can be provided, characterizing it as a truly self-sustained condensed matter nuclear fusion reaction.

The Phenomenon of So-Called Quantum Entanglement: In mainstream physics, quantum entanglement is mathematically proven but famously lacks a mechanical, physical explanation for how information or states correlate instantly over vast distances without a physical signal—a phenomenon Albert Einstein famously dismissed as spooky action at a distance (30, 31). Shrair's model eliminates this "spooky" element by replacing abstract quantum probability with emergent, deterministic geometry. The model explains quantum entanglement through three core concepts: The Global Cosmic Lattice (An Interconnected Vacuum): Instead of viewing empty space as an isolated vacuum where particles act independently, the helical model dictates that the entire Universe is structurally connected via a fundamental, continuous network. In this framework, space is a discrete, geometric lattice consisting of circulating, spiral field currents. Because everything is embedded in this unified, underlying cosmic architecture, no particle is truly isolated. Resonance Over Distance (The Helix Tuning Effect): In the Helical Universe model, what standard physics calls a wavefunction or a probabilistic quantum state is reinterpreted as a physical, real-time update of geometric resonance. When two particles become entangled, they are mechanically paired so that their helical or spiral geometries share a highly synchronized phase or frequency resonance. Consequently, distance in standard 3D space becomes an illusion regarding their correlation. Because they are part of the same continuous helical field, changing the state of one particle acts like pulling or twisting one end of a tightly wound spring—the structural update or chirality resonance registers simultaneously at the other end. The Elimination of Non-Locality: Standard quantum mechanics relies on non-locality, which implies instantaneous action regardless of spatial separation. Jamal Shrair's model reframes this completely: Particles are not isolated, dimensionless points separating across an empty void. Instead, they are localized disturbances or vortices within a singular, interconnected cosmic matrix. When two "entangled" particles react in real-time regardless of distance, it is not because a signal is crossing space instantly. Rather, it is because both particles are part of the same structural system embedded in a continuous, energetic medium. Modifying one part of the medium inherently and instantly manifests a corresponding change in the other, completely eliminating the need for metaphysical "spooky action at a distance" or standard quantum non-locality.

However, in standard physics, quantum entanglement is represented using tensor products ($\otimes$) and non-separable wavefunctions in a Hilbert space (32). To model the alternative view—where particles are not inherently "spooky" but are instead driven by a continuous, overarching

cosmic magnetic field—the mathematics must shift toward coupled differential equations, continuous field tensors, and pilot-wave/hydrodynamic models.

Modeling the Global Cosmic Influence: Instead of particles existing in isolation, they are embedded in a universal magnetic field tensor. You can represent the background cosmic field as a high-order vector field or a localized manifestation of a global tensor: B_{cosmic}(x, t), Where (x) is the spatial coordinate and (t) is time. If two particles (A and B) are created from the same source, their initial states are correlated because they are born from the exact same local field conditions: $B_{source} = B_{cosmic}(x_0, t_0)$

Coupled Equations of Motion (The Entanglement Mechanism): In this model, what looks like "instantaneous action at a distance" is actually the result of both particles responding to a shared, underlying medium (similar to De Broglie–Bohm pilot wave theory or hydrodynamic quantum analogs). You can model the spin or state (σ)) of the particles as being dynamically driven by the local gradient of the cosmic field:

$\frac{d\sigma_A}{dt} = \gamma\ (\sigma_A \times B_{local}(x_A\ ,\ t))$ $\frac{d\sigma_B}{dt} = \gamma\ (\sigma_B\ B_{local}(x_B\ ,\ t))$ Where: γ is the gyromagnetic ratio (or a model-specific coupling constant). B_{local} is the sum of the global cosmic field and any local perturbations: $B_{local} = B_{cosmic} + B_{env.}$ Because $B_{cosmic}(x_A\ ,\ t)$ and $B_{cosmic}(x_B\ ,\ t)$ are causally linked through Maxwell's equations (or a modified cosmic electrodynamic equivalent) across the fabric of space, the behavior of particle A and particle B remains correlated without needing non-local information transfer.

Statistical Correlation via Shared Parameters: To satisfy Bell's theorem without non-locality, this type of model typically relies on **superdeterminism** or **background-dependence**. Mathematically, the probability distribution (P) of measuring outcomes **a** and **b** given detector settings **A** and **B** is written as: P(a, blA, B)= $\int \rho(\lambda)$ P (alA, λ) P (blB, λ) dλ. Because the cosmic field determines both the particle states *and* the state of the measuring apparatuses (since everything is interconnected), the independence assumption of Bell's theorem (P(λl A, B) = P(λ) is bypassed naturally by the mathematics of a fully coupled system (33).

Redshifting and Blueshifting in the Helical Universe Model: Standard cosmology uses the cosmic scale factor a(t) to show that space stretches: $1 + z = \frac{a\ (t_{observer})}{a(t_{emission})}$, but the author dismiss it as a mathematical artifact based on a misunderstanding of photon behavior and the wrong notion of the constant speed of light. He postulates that light loses energy due to the intrinsic properties of the medium and magnetic fields it traverses rather than expanding space. Namely, his model rejects the concepts of constant speed of light and metric expansion of space (ΛCDM). Instead of cosmic expansion, the model attributes the shift to strong, localized gravitational and magnetic fields near the source (such as galactic cores or quasars):

$$z = \frac{\Delta\nu}{\nu_0} \approx \frac{GM}{rc^2}$$

Basically, the phenomenon of redshifting is interpreted as the natural consequence of a non-expanding Universe that rotates and spins helically around a central axis. **Helical Rotation Instead of Expansion:** The model asserts that the Universe is stable but dynamically active, with matter flowing along vast helical (spiral) paths. **Differential Rotation Rates:** Different parts of the Universe spin at different rotational speeds rather than expanding at different rates. The radius of the Universe's spiral curve varies along its length. Because both the observer (Earth) and the observed galaxies are moving along complex helical trajectories, their relative line-of-sight velocities constantly change. **Reinterpretation of Shifts:** Within this framework, spectral line shifts are strictly attributed to Doppler-like rotational and orbital mechanics.

Redshift: Occurs when a celestial structure or galaxy moves away from the observer along its helical trajectory or is located in a section of the Universe spinning away from our line of sight.

Blueshift: Occurs when structures are moving toward the observer along the spiral pathway.

The author argues that anomalies in high-redshift data from modern instruments like the James Webb Space Telescope support a helical, variable-radius Universe over an accelerating expansion model. Note that, the proposed model of the author replaces the standard Friedmann-Lemaître-Robertson-Walker (FLRW metric) assumption of a unit time-component ($g_{tt} = 1$) with a conformal time-dependent framework, refuting the traditional spatial-expansion interpretation of Hubble's law and standard cosmological dynamics.

In other words, the author argues that setting ($g_{tt} = 1$) in the standard FLRW metric creates internal inconsistencies when handling accelerated expansion or general active mass conditions. To resolve this, he introduces a conformal time shift, which identifies cosmic time with conformal time rather than proper time. This framework explains cosmological redshift through cosmic time dilation—analogous to gravitational redshift—rather than the traditional geometric stretching of space.

So essentially, in mainstream physics, cosmological redshift is widely accepted as definitive proof of the Big Bang theory and an expanding Universe, where the literal stretching of space elongates traveling light waves. However, Shrair's alternative model completely rejects this standard paradigm, positing instead the following principles: **A stationary, non-expanding Universe:** The cosmos is not inflating or expanding outward from a singular cosmic singularity. **Helical rotation:** The entire Universe behaves like a gigantic vortex, spinning helically around a fixed central axis. **Rotational redshift and blueshift:** The observed shifts in the light spectrum are natural visual artifacts of this cosmic rotation. Because different regions of the Universe rotate at varying speeds along a variable radius, light emitted from them is either stretched (redshifted) or compressed (blueshifted) relative to our vantage point in the Milky Way.

In the Helical Universe Model, redshifting and blueshifting are mathematically represented through helical kinematics and chiral propagation. Instead of traditional Doppler-driven linear expansion, the shift is dictated by the composite geometry of light traveling along a winding path relative to an observer.

The standard definition of redshift/blueshift (z) remains grounded in the relative shift of observed wavelength (λ_{obs}) versus rest-frame emitted wavelength (λ_{emi}).

$$z = \frac{\lambda_{obs} - \lambda_{emi}}{\lambda_{emi}}$$

$\mathbf{z > 0}$ represents a Redshift (wavelength elongates).

$\mathbf{z < 0}$ represents a Blueshift (wavelength compresses)

Helical Component Parameterization: In a helical framework, the position vector $\vec{r}$(t) of a cosmic body or a propagating photon is defined by three primary variables: the radius of the helix (R), the angular frequency (ω), and the axial velocity along the helix axis (v_z).

The distance vector over time follows: $\vec{r}$(t) = (R cos(ωt), R sin(ωt), v_zt). When calculating the relative line-of-sight velocity (v_{los}) between an emitter and an observer within this model, the motion splits into two geometric dynamics: Axial Motion ($\boldsymbol{v_z}$): The linear movement along the cosmic axis. Orbital / Rotational Motion ($\boldsymbol{v_\theta = R\omega}$): The rotational movement around the helix cylinder. The Shift Equations: Redshifting ($\mathbf{z > 0}$) Redshifting occurs when the combined axial velocity acts recessively ($v_z > 0$) or when the alignment of the helical rotation vectors causes the source to curve away from the observer's line of sight. Mathematically, it incorporates the helical pitch angle ($\emptyset = \arctan(v_z / R\omega)$): $z_{helical} = \frac{v_z \cos(\theta) + R \sin(\theta) \sin(\omega t)}{c}$
(Where θ is the angle between the observer's line of sight and the central helix axis, and (c). When looking across vast intervals where the path length itself twists, the cumulative redshift stretches exponentially proportional to the arc length of the corkscrew trajectory (s): $1+z = e^{Ks}$

Bluesshifting ($\mathbf{z < 0}$)

Bluesshifting occurs when the source's trajectory brings it closer to the observer along the helical arc. Because objects move along circles superimposed on linear axes, a source can exhibit a periodic blueshift offset even if the global trend is expansionary, formulated as:

$$z_{helical} = \frac{-|v_z| \cos(\theta) - R \sin(\theta) \sin(\omega t)}{c}$$

If the rotational velocity vector component pointing toward the observer ($\mathbf{R\omega \sin(\theta)}$) exceeds the linear axial velocity drawing it away, the net value goes negative, producing a blueshift.

Comparison Matrix

Property	Cosmological Standard Model (ΛCDM)	Helical Universe Model

Primary Mechanism	Metric expansion of flat spacetime	Trajectory tracking along a chiral, corkscrew geometry
Distance Correlation	Dominated by linear Hubble scaling ($v = H_0 \mathrm{d}$)	Multi-scale cosmic rotation and pitch angle modulation
Local Variations	Peculiar velocities add linearly/relativistically	Periodic cycles of red/blueshift based on orbital phase (ωt)

It is important to note that the high number of redshifted galaxies we observe is not because everything is uniformly flying apart. Instead, it is a consequence of Earth's specific location within a cosmic corkscrew structure. Because of our solar system's current position on this spiral path, we happen to see most other galaxies moving away from us. If we were to teleport to a galaxy on the opposite side or a different section of this helix, the corkscrew motion would instead make it look like most galaxies are rushing toward us, causing them to appear blueshifted. Ultimately, this implies that cosmic movement is directional and structural rather than a uniform expansion, making our view of the cosmos highly dependent on our specific vantage point. In short, cosmic redshift is relative to the observer's location; the Universe isn't actually expanding like a balloon—we are simply observing it from a unique angle.

Modern Cosmological Observations Confirming the Helical Universe Model: Shrair's Helical Universe Model aligns with major discoveries from different space instruments, like James Webb Space Telescope (JWST). First, JWST data has revealed a preferred galaxy rotation and cosmic spin asymmetry. Specifically, analyses of the JWST Advanced Deep Extragalactic Survey (JADES) show a pronounced rotational asymmetry in early spiral galaxies, pointing to a preferred clockwise spin direction that becomes more prominent deeper into cosmic history. Furthermore, independent deep-space data analyzed by researcher Lior Shamir corroborates these unexpected, non-random spin distributions. Independent researchers argue that these findings serve as proof that standard cosmological models are entirely incorrect, suggesting instead that the Universe possesses a large-scale spiral or corkscrew geometry—offering direct evidence of a fundamentally helical, magnetically aligned cosmos (34).

Second, JWST observed unexpectedly mature early galaxies. The telescope has continuously shocked astronomers by discovering massive, fully formed, and highly structured spiral galaxies—such as the "Big Wheel" and "CEERS-2112"—existing just 1 to 2 billion years after the Big Bang. According to the standard framework, galaxies from that early era should be chaotic and unformed. However, because the author's model bypasses standard gravity-driven Big Bang evolution in favor of immediate magnetic formatting, the early presence of highly organized disks and spirals validates his Helical Universe model (35, 36).

The Cosmic Dipole Anomaly is Decisive Evidence Showing Helically Spinning Universe: A core pillar of modern cosmology is the Cosmological Principle, which assumes that on a grand scale, the universe is isotropic and homogeneous—meaning it should look uniform in every direction. However, recent analyses of vast galaxy and quasar distributions reveal a cosmic dipole anomaly. Matter in the distant universe appears significantly more lopsided and asymmetrical than the uniform glow of the Cosmic Microwave Background (CMB) radiation dictates (37, 38). This implies that the universe possesses a preferred direction, breaking standard conventional assumptions. According to the author, this cosmic dipole anomaly serves as decisive evidence for a helically spinning universe. Precisely, spinning or twisting a helical structure breaks its original, continuous helical symmetry because the axial uniform spacing and rotation become distorted. This symmetry breaking creates an asymmetrical structure that establishes a fundamentally non-reciprocal, lopsided environment for magnetic behaviors. Because a helix possesses a specific handedness (chirality)—either right- or left-handed—its physical properties inherently depend on the direction of travel or rotation. Consequently, this structural asymmetry induces unique, directional magnetic phenomena. For example, in helimagnetic materials like **α-Eup3** (as documented in PNAS), applying a magnetic field along the helical axis induces an asymmetric momentum distribution in the conduction electrons (39).

Fundamental asymmetry, or lopsidedness, is a foundational feature of the Universe—without it, life itself could not exist. Consequently, while mainstream theoretical physics often chases the aesthetic of perfect symmetry, empirical physics demonstrates that the cosmos is inherently imperfect at every scale. This makes complete sense: perfect symmetry results in total stagnation, whereas lopsidedness drives change, movement, and the very existence of matter (40). A prime example of this cosmic imperfection is the sun's magnetic activity. Rather than operating as a perfectly balanced, uniform dynamo, the sun exhibits significant regional imbalances. Its magnetic field and overall activity levels are distinctly asymmetrical between the northern and southern hemispheres, as well as across its eastern and western limbs. This asymmetry manifest in two major ways during the 11-to-14-year solar cycle:

- **Staggered Activity Peaks:** The northern and southern hemispheres do not experience peak magnetic activity (solar maximum) at the exact same time. As a result, one hemisphere often develops significantly more sunspots, solar flares, and coronal mass ejections than the other during different phases of the cycle.
- **Unsynchronized Polar Flips:** When the sun's magnetic field reverses, the poles do not flip in perfect unison. One pole frequently weakens and reverses its polarity months or even years before the other, creating a temporarily lopsided global magnetic structure.

Based on the Helical Universe Model, the Hubble Tension is a Purely Theoretical Problem: When researchers use the Planck Satellite or ACT to look at the so-called early universe (the

Cosmic Microwave Background) and extrapolate forward using the standard model, they get an expansion rate of roughly 67–68 km/s/Mpc. On the other hand, when JWST and Hubble measure the so-called local, modern universe using star markers (Cepheids and Supernovae), they consistently find a rate of 73–76 km/s/Mpc. Moreover, recent cross-validated observations by JWST have ruled out simple human or instrumental errors. The discrepancy has surpassed a 5-to-7 sigma statistical significance.

However, according to the Helical Universe model, the Hubble Tension is a purely theoretical problem. Namely, the observed redshift of galaxies—which mainstream science attributes to the expansion of space—is instead interpreted as a consequence of differential rotation. Galaxies at different distances are viewed as moving along a helical path or spinning around a central cosmic axis. In other words, because different regions or layers of this large-scale helical structure rotate at varying velocities relative to the central axis, observers looking at different scales (e.g., local galaxies versus the deep cosmic background) calculate conflicting rates of movement. Within this framework, the region that spins the fastest must be the center of the universe. Furthermore, rotational velocity is intrinsically proportional to magnetic dipole intensity; therefore, an incredibly fast-spinning, hyper-dense core generates the monumental magnetic field required to centrally power and hold the entire universal matrix together. In this model, the Hubble Tension is not an error or a flaw in expansion calculations, but rather a direct signature of these varying rotational speeds across different zones of the helix.

It is worth mentioning that in April 2025, a study led by astrophysicist István Szapudi proposed a mathematical model where the entire universe completes just one rotation every 500 billion years. While this might seem like a very slow rotation, it is actually incredibly rapid when taking into account the immense size of the universe. For comparison, structures and stars existing on the outermost edges of a disk galaxy like the Milky Way take roughly 200 million to 1 billion years to complete just one full rotation. Most importantly, a 500-billion-year cosmic rotation implies a mind-boggling rotational velocity at the core of the universe.

The Helical Model Refutes the Cosmic Web: Since the cosmic web relies primarily on dark matter, its structural framework collapses within the helical Universe model, which replaces invisible matter with cosmic-scale electromagnetic fields. Recent observational breakthroughs have detected ancient, hyper-massive galaxy clusters with unexpectedly dense concentrations of matter that stabilized far earlier than standard simulations allow. These empirical findings present a substantial challenge to the Lambda Cold Dark Matter model, which governs current simulations of cosmic evolution. Under this standard framework, structure formation is a "bottom-up" process: small dark matter halos slowly merge over billions of years to weave the filaments of the cosmic web. However, the discovery of highly concentrated architectures in the very early universe implies that matter aggregates significantly faster than standard models can replicate. Consequently, the Helical Universe model challenges the conventional cosmic

web paradigm, and these recent observations provide additional evidence supporting this alternative framework.

Standard Simulations (ΛCDM)	Recent Empirical Observations
Gradual, bottom-up aggregation	Rapid, early-stage collapse
Massive clusters form late	Hyper-dense clusters exist early
Slow weaving of the cosmic web	Accelerated structural growth

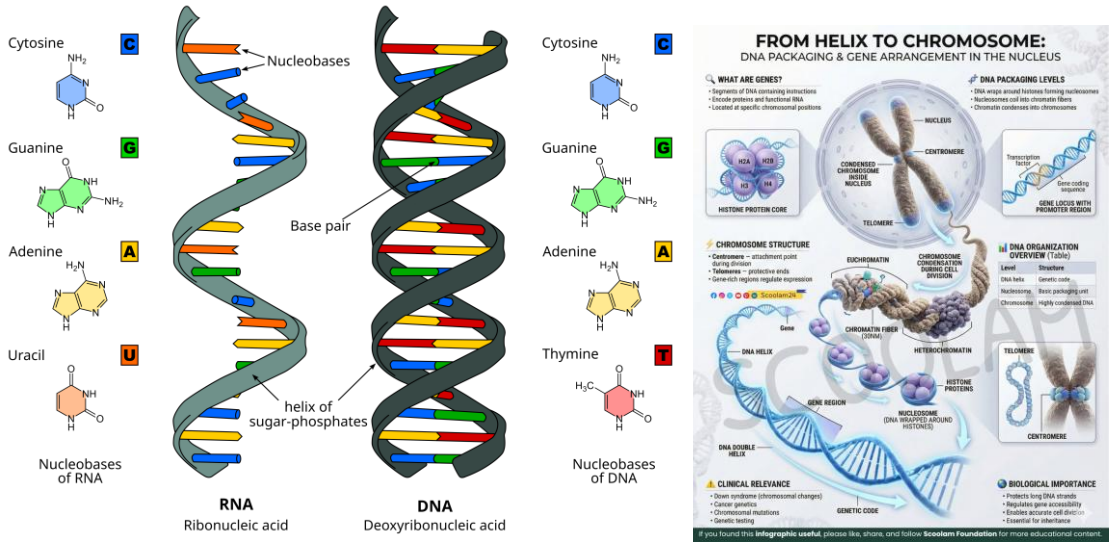
Another compelling piece of evidence supporting the helical Universe model is the super-velocity of particles emitted from galactic centers. For instance, although mainstream physics currently attributes this to an optical illusion known as superluminal motion, particles from the center of the galaxy Messier 87 (M87) appear to travel much faster than the speed of light. Observations from NASA's Chandra X-ray Observatory and the Hubble Space Telescope track "knots" of material within the jet moving at speeds of up to 6.3 times the speed of light. Additionally, it is worth noting that conventional astrophysics similarly treats the visible surface of the sun as an optical illusion (a photosphere defined by optical depth) rather than a physical, liquid surface.

In addition to the points above, the phenomenon of so-called quantum teleportation—often described as instantaneous remote interaction (41)—provides direct empirical evidence that the Universe is entirely interconnected by a fundamental magnetic substance. Specifically, because everything in the universe shares this underlying magnetic substance within a unified, dynamically linked matrix, what mainstream science labels as instantaneous teleportation is viewed in this model as a natural, synchronized reaction traveling along universal magnetic pathways.

The Origin of Biological Life as Part of the Unified Helical Universe: According to the Helical Universe model, magnetism is the foundational substrate of all cosmic structures and subatomic particles. Because galaxies and subatomic matter share this common origin, life itself is viewed not merely as a random chemical phenomenon, but as a direct biological extension of this universal magnetic framework. Fundamentally, the primary drivers of life's origin are universal magnetic templates and grand, spiraling cosmic forces. So, rather than emerging purely from random chemical collisions in a primordial soup, biological life relies on these grand spiraling forces and magnetic fields to dictate the alignment, behavior, and structural geometry of charged particles. The pervasive magnetic radiation and the underlying spatial lattice provide the necessary structural guidelines and localized energy sources required for complex molecules like DNA, RNA, and proteins to self-organize. Ultimately, the natural corkscrew and

spiraling patterns observed throughout nature—such as the double helix of DNA—are a direct physical reflection of the universe's macroscopic helical and torsional field mechanics.

DNA begins as a double helix, but to fit inside the nucleus it undergoes multiple levels of packaging. The helix wraps around histone proteins to form nucleosomes, creating a structure known as chromatin. As chromatin coils and condenses further, it forms tightly packed chromosomes, especially visible during cell division. This hierarchical organization protects genetic material, regulates gene expression, and ensures accurate distribution of DNA to daughter cells (42).



Left: Comparison of a single-stranded RNA and a double-stranded DNA with their corresponding nucleobases. Right: From Helix to Chromosome: DNA Organization Inside the Cell, Scoolam Foundation

However, electromagnetism is the fundamental physical force that shapes, stabilizes, and interacts with DNA. In physics and biochemistry, it does not act as a mystical power source, but rather as the governing force behind the molecular structure, electrical conductivity, and environmental sensitivity of the genetic code (43,44). This connection manifests in three primary scientific ways: 1. **The Force Behind the Double Helix (Molecular Bonds):** The entire structure of DNA relies on electromagnetic forces. The base pairs (A-T and C-G) that connect the two strands are held together by hydrogen bonding, which is driven by electromagnetic attraction between positive and negative dipoles. Also, the outer rails of the DNA strand are highly negatively charged due to phosphate groups, creating an active electrostatic field around the molecule. 2. **Electrical Conduction and Charge Transfer:** DNA is structurally capable of conducting electrical charges along its axis. The overlapping (π)-orbitals of the stacked base pairs in the center of the helix form a path that allows electrons to travel down the molecule. Research shows that specialized repair proteins utilize this conductivity to scan DNA. When a mismatch or break occurs in the genetic code, the electrical flow is disrupted, signaling the proteins to fix the damage at that exact location. **3. Response to External Fields (The Fractal Antenna Property):** Biophysicists have described DNA as a fractal antenna. Due to its compact, repeating, self-similar geometry (coiled into histones, chromatin, and chromosomes) and its

ability to conduct electrons, DNA naturally interacts with a wide range of electromagnetic frequencies (EMF). Furthermore, exposure to certain electromagnetic fields can shift the distribution of charges within a molecule. This shift can initiate transcription or trigger cellular stress responses, such as prompting the cell to produce heat-shock proteins (like HSP70) for protection. However, strong or prolonged exposure to non-ionizing or ionizing fields can generate reactive oxygen species (ROS) or cause physical breaks in DNA strands, leading to genetic mutations. Note that, the two strands of a standard DNA double helix do not rotate in opposite physical directions; instead, the entire molecule forms a single right-handed twist (with both strands winding in the same direction) while their chemical orientation runs antiparallel (one strand oriented 5′ to 3′ and the other 3′ to 5′).

Nonetheless, for life to begin, complex biological molecules like amino acids, proteins, and nucleic acids needed to arrange themselves out of chaotic primordial environments. The Helical universe model posits that cosmic and planetary magnetic fields act as structural guides. By influencing the spin, alignment, and behavior of charged particles and polar molecules, these magnetic forces dictated how the first complex molecular chains organized, facilitating the precise geometric arrangements required for living matter.

Moreover, magnetic fields act as a vital energy source. Rather than relying solely on thermal or chemical energy—such as deep-sea hydrothermal vents or lightning strikes—the Helical Universe model highlights magnetic fields as a primary driver of early chemical reactions. The dynamic fluctuation of interlinked magnetic fields provided the precise energy required to break and form bonds, powering the prebiotic synthesis that led to the first self-sustaining biological systems.

A defining mystery in the origin of life is homochirality—why life on Earth exclusively uses left-handed amino acids and right-handed sugars. Shrair's perspective aligns with the idea that magnetically polarized cosmic radiation, such as muons and electrons traveling along interstellar magnetic lines, consistently interacted with primordial matter. This constant, structurally asymmetric magnetic influence favored one mirror-image form over the other, permanently imprinting a specific spatial handedness into the blueprint of DNA and RNA. In other words, the question is why are DNA and RNA helical? It is because they are dictated by the underlying magnetic and helical geometry of the cosmos. Besides that, the Helical Universe framework supports a variation of the panspermia hypothesis, suggesting that biological building blocks are transported across space via hypervelocity cosmic dust. When these streams enter a planetary atmosphere, the Interplanetary Magnetic Fields (IMF) interact with the planet's native magnetic frequencies. This "magnetic resonance" or matching of magnetic memories allows alien biological precursors to integrate smoothly into a planet's biosphere, fostering the ideal frequencies for flora and fauna to proliferate. Furthermore, the Helical Universe framework supports the theory that these electromagnetic forces continue to regulate evolutionary biology today.

Conclusion

Mathematics is a powerful human construct for mapping the cosmos, but it must never be mistaken for physical reality itself. While elegant, symmetrical equations and abstract geometry allow scientists to explore concepts beyond immediate human perception, these frameworks remain merely theoretical until validated by empirical observation. When researchers become overly attached to mathematical frameworks—such as string theory or the multiverse—without empirical backing, they risk creating dogmatic, unverifiable models that defy physical intuition. As modern data from instruments like the James Webb Space Telescope and the Dark Energy Spectroscopic Instrument (DESI) continue to challenge foundational cosmic models, the current crisis in cosmology serves as a critical reminder: no matter how beautiful an equation appears on paper, empirical evidence remains the ultimate arbiter of physical truth.

The Helical Universe model, proposed by the author, offers a radical departure from mainstream astrophysics by framing the cosmos as an inherently magnetic, deterministic, and fluid-driven system. By rejecting the concepts of empty spacetime and probabilistic quantum mechanics, this framework introduces a dense, energetic Aether that serves as the physical substrate for all cosmic phenomena. Within this medium, the universe does not expand; instead, it flows in a grand corkscrew geometry, where interconnected helical and spiral structures govern matter from microscopic to astronomical scales.

This shifting perspective fundamentally redefines planetary mechanics. Rather than moving in flat, closed ellipses around a stationary center, celestial bodies trace continuous, three-dimensional helical trajectories as the entire solar system travels rapidly through the galaxy. Ultimately, this paper demonstrates that the primary bottleneck in modern physics is not a lack of data, but a dangerous conflation of abstract mathematics with physical reality. By allowing purely mathematical delusions to dictate cosmological frameworks, mainstream science has retreated into rigid, dogmatic paradigms that fundamentally misinterpret the cosmos. True scientific progress demands that we move away from these overly formalized abstractions and re-evaluate our foundational approach to both stellar physics and cosmology.

As a corrective to these systemic limitations, the Helical Universe Model—driven by its core concept, the Magnetic Structure of Matter—offers a robust alternative. By anchoring theoretical physics back to observable reality, this model provides a rational, unified explanation for empirical phenomena across all scales. From subatomic configurations to macrocosmic networks, and even the intricate structures of biological life, the Helical Universe Model serves as a comprehensive framework capable of restoring clarity, coherence, and genuine progress to our understanding of the universe.

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