Exploration

An Exploration to Pan-Christic Biogenesis with Implications: An Alternative to Crick's Panspermia Hypothesis & Its Implications for Cosmic Consciousness

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Abstract

The traditional *panspermia* hypothesis, popularized by Francis Crick and Leslie Orgel, posits that life originated elsewhere in the cosmos and was transported to Earth via meteoritic or cometary vectors. While panspermia remains an active research topic, although it has reduced impact in recent years, it also faces challenges related to the survivability of complex biomolecules during interstellar transit and the lack of direct empirical support, therefore it has been considered lacking credibility for many scientists. This paper introduces *pan-Christic biogenesis* hypothesis, a conjectural framework that attributes the emergence of life to a purposeful, consciousness-infused cosmic agency rooted in theological tradition. Drawing on historical biogenesis experiments (e.g., Francesco Redi, 1668, [1]) and contemporary astrobiological observations, we contrast pan-Christic biogenesis with both panspermia and bio-semiotic approaches, emphasizing the role of inherent consciousness in celestial bodies (Sun, Earth, Moon, [2][3]). We further explore whether such consciousness could influence planetary catastrophes (e.g., Vesuvius 79 AD, hypothesized "*Atlantis*" submergence, cf. Plato's book [22]) and discuss the theological implications of divine intervention as described in biblical prophecy (Book of Malachi). The article concludes with a comparative table of selected ancient catastrophes and outlines avenues for future interdisciplinary inquiry.

Keywords: Consciousness, theology, biogenesis, Christian view, panspermia, cosmos, meteorite.

1. Introduction

The origin-of-life problem remains unresolved. Classical biogenesis (spontaneous generation) was disproved by Francesco Redi's 1668 experiments, which demonstrated that maggots arise from eggs laid by flies, not from decaying meat itself. Modern microbiology accepts that life arises from pre-existing life under suitable conditions (abiogenesis still under investigation).

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Panspermia hypothesis – Crick & Orgel (1973) proposed that nucleic-acid precursors could survive interstellar travel, seeding nascent planets. Despite intriguing laboratory data on extremophile resistance, panspermia lacks direct observational confirmation and raises the "origin of the seed" paradox.

The question of how living systems arise has shaped biology for centuries. Early experimental work aimed to disprove spontaneous generation—the notion that life could emerge de novo from inert matter—and to establish **biogenesis**, the principle that "life comes from life." Landmark studies by Francesco Redi (1668) and Louis Pasteur (1859-1861) provided decisive evidence against spontaneous generation [1]. In the twentieth century, the focus shifted toward **abiogenesis**, the hypothesis that life originated from non-living chemical precursors under pre-biotic conditions. This review follows the historical trajectory from Redi's macroscopic experiments to modern synthetic chemistry that attempts to reconstruct the earliest steps of metabolism and genetics.

Table 1: Introduction: Classical Experiments on Biogenesis

Scientist	Year	Experimental Design	Main Finding	Key Publication
Francesco Redi	1668	Meat placed in open jars vs. sealed jars; observation of maggot development	Maggots arose only where flies could lay eggs; ruled out "generation from meat"	*Esperienze Intorno alla Generazione de' Viventi* (Redi, 1668)
Louis Pasteur	1859-1861	Sterile broth in swan-necked flasks; broth remained clear despite exposure to air	Microbial growth requires inoculation from existing cells; reinforced biogenesis	*Mémoire sur les phénomènes vitaux* (Pasteur, 1861)

These experiments collectively established the principle of **biogenesis** and set the methodological standard of controlling for contamination—a prerequisite for any later claim of life arising from non-living matter.

2. The Rise of Abiogenesis Research

Miller–Urey Experiment

Stanley Miller (1953) simulated early Earth's reducing atmosphere (CH_4, NH_3, H_2, H_2O) and applied electrical discharges to generate organic molecules. The experiment yielded a suite of amino acids (e.g., glycine, alanine) and other organics, demonstrating that **pre-biotic synthesis of biologically relevant compounds is plausible** under plausible atmospheric conditions.

RNA World Hypothesis

The discovery that ribozymes can catalyse reactions (e.g., self-cleavage) led to the **RNA world** model, proposing that RNA served both as genetic material and catalyst before the evolution of DNA-protein systems. Key experiments showed non-enzymatic template-directed polymerization of ribonucleotides under mineral surfaces.

Pre-biotic Metabolism

Research by Sutherland and colleagues demonstrated **wet-dry cycling** on mineral surfaces can drive the formation of activated pyrimidine nucleotides from simple precursors (glycolaldehyde, cyanamide, phosphate). This work bridges the gap between simple organics and the building blocks of RNA.

Peptide Formation and Catalysis

Powner, Gerland, and Sutherland (2009) reported a pathway to ribose 5 phosphate and nucleobases that avoids the "ribose problem" by employing UV driven chemistry on mineral substrates, supporting simultaneous emergence of nucleic acid components.

Autocatalytic Networks

Recent theoretical and experimental work on **autocatalytic sets** (e.g., Kauffman 1993; Hordijk & Steel 2013) suggests that once a minimal network of mutually catalytic reactions forms, it can sustain and expand, providing a plausible route from chemistry to metabolism.

Outlook

The transition from macroscopic biogenesis experiments (Redi, Pasteur) to molecular-level abiogenesis studies illustrates a rigorous methodological continuity. Redi and Pasteur successfully dismantled the myth of spontaneous generation—the idea that life emerges fully formed from decaying matter—by proving that life must come from life (*omne vivum ex vivo*). Modern abiogenesis does not seek to reverse this triumph; rather, it attempts to map a "*staircase*" of complexity, moving from simple organics to self-replicating polymers and protocells. However, as the gap between "non-life" and "life" remains stubbornly wide, the scientific community has reached for increasingly exotic scaffolding to support the crumbling pillars of materialist philosophy.

Panspermia: The Materialist "Safety Net"

Meanwhile, it can be said that the Panspermia hypothesis—the idea that life was "seeded" on Earth from extraterrestrial sources, cf. Crick—often presents itself as a desperate effort to provide scaffolding for an *evolutionary biology paradigm* rooted in strict materialism. When the statistical improbability of life's emergence on Earth becomes mathematically overwhelming, Panspermia acts as a "buffer of distance." By shifting the origin of life to a remote corner of the galaxy or a distant epoch in time, proponents avoid the fundamental philosophical crisis: the inability of blind matter to generate complex, functional information.

In this sense, Panspermia is not an answer, but a *postponement.* It preserves the materialist assumption—that life is a localized chemical accident—while ignoring the lack of a mechanism for how that accident occurred elsewhere. It is a "god of the gaps" for the secularist, substituting an alien seed for a creative principle, yet failing to explain how that seed acquired its initial biogenetic instructions.

Biosemiotics and the Limits of "Terrence's" DNA Logic

Similarly, the burgeoning field of **biosemiotics**—often associated with thinkers like Terrence Deacon or those exploring the "language" of life—offers a fascinating bridge between chemistry and information. Biosemiotics views the DNA structure as a semiotic system where molecules function as signs and codes. While this provides a sophisticated framework for understanding the *origination* of DNA as a symbolic medium, it remains strictly descriptive rather than causative.

Biosemiotics can explain *how* a sequence of nucleotides functions like a sentence, but it struggles to explain *who* (or what) wrote the book. While it moves beyond the "clunky" materialism of the 20th century, it remains incomplete because it treats the "meaning" of life as an emergent property of the system rather than the foundational cause of the system. It identifies the "syntax" of life but misses the "Semantics"—the underlying **Pan-Christic** signal that informs the biogenesis process from the start.

3. Pan-Christic Biogenesis

The pan-Christic biogenesis hypothesis seeks a teleological alternative that integrates a conscious cosmic agency (hereafter "*the Divine*") with physical processes, aiming to resolve the seed-paradox by invoking purposeful creation rather than accidental dispersal.

The Necessity of the Pan-Christic Synthesis hypothesis

Both Panspermia and Biosemiotics are "half-way houses" on the road to a more robust theory of life. They recognize that the "primordial soup" model is insufficient, yet they remain tethered to a philosophical framework that refuses to acknowledge a conscious, teleological driver.

- **Panspermia** provides the *spatial* scaffolding but lacks the *creative* spark.
- **Biosemiotics** provides the *linguistic* scaffolding but lacks the *ontological* source.

To bridge these gaps, we must move toward a **Pan-Christic biogenesis hypothesis**. This framework suggests that the transition from simple organics to complex life is not a series of lucky chemical accidents, but the manifestation of a universal "Life-Frequency" or pan-Christic Logos interacting with planetary matter. In this view, the Sun-Earth consciousness provides the necessary informational "reset" and "direction" that Darwinian models lack. Rigorous interdisciplinary efforts must continue, but they must be willing to look beyond the materialist horizon to see the Earth not as a laboratory for chance, but as a vessel for conscious biological intent.

A model based on Shannon entropy

In the debate over the origin of life, the mathematical bridge between chemistry and biology is often described using Shannon entropy. However, a rigorous analysis of the "pan-Christic biogenesis model" reveals that while Shannon's theory measures the capacity for information, it cannot account for the semantic density—the actual meaning and functional intent—inherent in the genetic code.

Shannon entropy (H) provides a measure of the statistical uncertainty or "surprise" in a sequence of symbols. In a DNA sequence, H tells us how many bits are required to encode the four nucleotides (A, C, G, T). While a high entropy indicates a complex, non-repetitive sequence, it does not distinguish between a meaningful genetic instruction and a random string of "gibberish."

In contrast, the **pan-Christic biogenesis model** focuses on **Semantic Density**. This is the ratio of functional information to the total possible arrangements. As Stephen Meyer argues in *Signature in the Cell*, the probability of a single functional protein of 150 amino acids forming by chance is roughly 1 in 10^{164}. This "informational hurdle" represents a density of meaning that exceeds the capabilities of any known unguided material process.

The Failure of Panspermia and Biosemiotics

To avoid this mathematical problem related to the question of origin of life on Erth, many modern theorists turn to **Panspermia** or **Biosemiotics**, but both remain fundamentally incomplete:

1. **Panspermia (The Geographic Displacement):** By suggesting that life was "seeded" from space, Panspermia merely moves the problem to a different coordinate. It explains the *transport* of information but remains silent on the *origin* of the information itself. If the Earth is too young for the "Shannon entropy" of DNA to have decreased into "semantic density," shifting the timeline to a distant galaxy does not solve the mechanism; it only creates an infinite regress.
2. **Biosemiotics (The Descriptive Trap):** Biosemiotics correctly identifies DNA as a "sign" and "code" system. However, as Marcello Barbieri notes, a code requires an **adaptor**—a molecular bridge that links the sign to the meaning. Biosemiotics describes the *existence* of the language of life but cannot explain the *emergence* of the convention itself. Codes, by definition, require a "codemaker."

The "Invisible Hand" and the Pan-Christic Signal

If the genetic code is a real code—arbitrary, symbolic, and functional—it signifies what Meyer calls a "Signature." The pan-Christic model posits that this is not a random occurrence but a **structured response to an external, intelligent signal**. The Sun-Earth consciousness acts as the physical medium through which the "Invisible Hand" of God—the *Logos*—induces patterns in matter.[1]

This is more than a philosophical claim; it is a probabilistic necessity. When the probability of a system (P) is so low that it exceeds the universal probability bound, we must infer a **Designing Intelligence**. The "pan-Christic" element suggests that life is "biogenetically tuned" to the frequency of its Creator, making the Earth a responsive receiver of a cosmic, intentional signal.

Table 2

Aspect	Panspermia	Pan-Christic Biogenesis	Bio-semiotics
Essential premise	Life (or its building blocks) is transferred across space.	Life is generated by a conscious cosmic agency that imbues matter with purpose.	Life is a network of sign-processes; meaning emerges without intrinsic consciousness.
Mechanism of distribution	Meteorites, comets, interstellar dust.	Divine intentionality expressed through cosmic bodies (Sun, Earth, Moon).	No distribution mechanism; focus on local semiotic interactions.
Role of consciousness	None (purely physical).	Central – Sun, Earth, Moon possess proto-consciousness.	Absent; consciousness is emergent, not fundamental.
Testability	Laboratory simulation of survival; isotopic signatures.	Currently non-empirical; relies on theological/philosophical argument.	Empirical studies of signalling in microorganisms.

Conscious Celestial Bodies

- Solar Consciousness – Analogous to the ancient concept of a "*living Sun,"* modern speculative physics sometimes treats the Sun as a self-organizing plasma system capable of complex information processing (e.g., magnetohydrodynamic turbulence). [3]
- Terrestrial Consciousness – Gaia-hypothesis literature proposes Earth as a self-regulating system; *pan-Christic biogenesis* interprets this regulation as a manifestation of divine intentionality.[2]

[1] cf. With regard to the Hebrew meaning of The Word of God as Memra of God, see for instance, D. Boyarin "*The Gospel of Memra*" (2001)

- Lunar Role – The Moon's tidal influence on Earth's biosphere is framed as a conduit for divine modulation of biological rhythms.

Re-reading past cataclysmic events as recorded in ancient past.

The hypothesis posits that a conscious Sun/Earth can intervene in extreme events when humanity deviates from divine commandments (cf. an interpretation of Malachi 4:1-2). Below is a non-exhaustive comparative table of ancient catastrophes, their geological evidence, and the speculative theological interpretation.

Table 3. Comparison between traditional scientific explanation of certain events in the past

Event	Approx. Date	Geological / Archaeological Evidence	Traditional Scientific Explanation	Proposed Pan-Christic Interpretation
Mount Vesuvius eruption (Pompeii)	79 AD	Ash layers, preserved bodies, carbonized food	Plinian eruption driven by magma-gas dynamics	Sun's "protective pulse" delayed wider devastation; divine warning to "forbidden practices."
Santorini (Thera) eruption	~1600 BC	Thera ash in Mediterranean sediments, collapse caldera	Massive volcanic explosion, tsunami generation	Lunar tidal resonance amplified eruption; divine retribution for early Bronze-Age hubris.
"Atlantis" submergence (hypothetical)	~9600 BC (post-glacial)	Submerged structures in the Atlantic (controversial)	Rapid sea-level rise after meltwater pulse	Earth's conscious "reset" to curb moral decay of an advanced coastal civilization.[22]
Minoan Thera eruption impact	~1628 BC	Destruction layers on Crete, climatic anomalies	Volcanic winter, tsunamis	Sun's "temperature modulation" limited global cooling, preserving life elsewhere.
Younger Dryas impact hypothesis	~12,800 BP	Ice-core nitrate spikes, megafaunal extinctions	Possible comet fragment airburst	

Caveat: *The above shortlisted events were there, but the interpretations are hypothetical, and may be or may be not supported by mainstream scientific consensus. Those listed are presented solely to illustrate how pan-Christic biogenesis may offer an alternative framework to historical catastrophes.*

Remark on interpretation

In our proposed **pan-Christic biogenesis hypothesis**, the Earth is not merely a passive rock but a conscious participant in a solar-planetary feedback loop. This perspective suggests that "Sun-Earth consciousness" acts as a regulatory mechanism for the biosphere.[2] Under this framework, paleo-geological catastrophes—such as the submergence of Atlantis or the destruction of Pompeii—are reinterpreted not as random tectonic failures, but as targeted, conscious "resets" triggered by the moral and energetic decay of advanced civilizations.

The Intertextual Bridge: Plato and Scripture

An intertextual reading allows us to synthesize the philosophical reports of Plato with the geological and biblical records of destruction. In *Timaeus* and *Critias*, Plato describes the Atlantean civilization as a technologically and militarily superior power that eventually succumbed to "unrighteous ambition" and "moral decay." Plato's account of the Atlantic submergence, occurring in a "single day and night of misfortune," serves as a secular echo of the biblical Deluge.

When we read these reports alongside the "pan-Christic" lens, the **moral decay** mentioned by Plato acts as a disruptive signal within the Earth's consciousness. If biogenesis is fundamentally "Christic" (interconnected, purposeful, and life-oriented), then a civilization that pivots toward systemic exploitation and violence creates a "bio-energetic dissonance." The Sun-Earth system responds to this dissonance by inducing a catastrophic reset to preserve the integrity of the planetary life-cycle.

Catastrophic Resets -- interpreted as Global "*Immune Responses*"

The following table illustrates how various historical and legendary catastrophes can be read as conscious interventions within this hypothesis:

Table 4. Pan-Christic "regenerative Earth" Interpretation of certain events in the past

Event	Conventional Interpretation	Pan-Christic "regenerative Earth" Interpretation
Atlantis Submergence	Tectonic shift or rising sea levels (11,600 BP).	A conscious purging of an advanced coastal civilization that had reached a "moral tipping point."
Pompeii (Vesuvius)	Subduction zone volcanic eruption (79 AD).	A localized "reset" of a decadent Roman centre, serving as a symbolic and physical warning to the empire.
The Noachian Flood	Localized Mesopotamian flooding.	A global reconfiguration of the Earth's crust to terminate a pre-diluvian era of systemic biological corruption.

[2] Note: interested readers are advised to see our preceding article in this journal, V. Christianto & F. Smarandache, "How Physicists Encounter with the Ultimate Source of Consciousness," *Scientific God Journal,* 16(1): pp. 01-09 (2025), also in JCER, 2025. We mentioned a previous hypothesis in these articles, a previous article by H. Hu et al.

The Role of Sun-Earth Interaction

This hypothesis implies that the Sun acts as the "informational driver" (the *Logos* or pan-Christic signal) while the Earth acts as the "biogenetic receiver." Disruptions in human collective consciousness may manifest as fluctuations in the Earth's geomagnetic field. When these fluctuations reach a critical threshold—often correlated with high solar activity—the "consciousness" of the planet triggers a physical release.

This reading suggests that the "Great Deep" and the "Windows of Heaven" are literal gateways for this Sun-Earth energy exchange. By treating Plato's *Timaeus* [22] not just as a myth but as a **paleo-astrogeological report**, we can see that ancient catastrophes are the Earth's way of

A comparison with Bio-semiotics hypothesis

Bio-semiotics treats organisms as sign-processing systems, emphasizing meaning without invoking consciousness as a primitive property. Pan-Christic biogenesis diverges by **postulating intrinsic consciousness** at the planetary scale, thereby allowing a top-down influence on lower-level biological processes.

Table 5. Comparison between Bio-semiotics and pan-Christic biogenesis interpretations

Feature	Bio-semiotics	Pan-Christic Biogenesis
Agency	Distributed among organisms	Centralized (cosmic consciousness)
Evolutionary driver	Semiotic exchange, selection	Divine intention guiding evolutionary pathways
Predictive power	Generates testable hypotheses about signalling networks	Lacks falsifiable predictions; primarily interpretive

Implications for (celestial) Exobiology

1. **Search for Conscious Worlds** – If planetary consciousness is a prerequisite for life, exoplanet surveys should prioritize bodies exhibiting stable magnetic fields, energy fluxes, and self-regulating climates (e.g., Earth-like planets in the habitable zone).
2. **Re-evaluating Biosignatures** – Traditional biosignature gases (O_2, CH_4) might be complemented by **"consciousness markers"** such as anomalous electromagnetic patterns, though no empirical methodology exists yet.
3. **Ethical Considerations** – Recognizing planetary consciousness would demand new planetary protection protocols, akin to respecting sentient entities.

4. Discussion

Assessment

- **Empirical Gaps** – No measurable parameter currently validates *planetary consciousness* (nonetheless, see [3]).
- **Alternative Explanations** – Conventional geophysical models adequately explain the listed catastrophes without invoking divine agency.

Thus, pan-Christic biogenesis hypothesis while remains a metaphysical framework rather than a scientific theory, but it is considered here that the hypothesis may be found useful perhaps for interdisciplinary dialogue between theology, philosophy, and astrobiology.

An intertextual re-reading of Malachi 4:2[3]

The closing book of the Hebrew Scriptures, Malachi, ends with a striking vision that has long drawn the attention of theologians and biblical scholars. "But for you who fear My name, the Sun of righteousness shall rise with healing in its wings" (Malachi 4:2). Traditional exegesis reads this image as a messianic promise, yet an alternative reading invites us to imagine the "Sun of righteousness" as a literal, conscious presence that observes humanity's harmful habits and stands ready to act.[4]

The Conscious Sun Recent philosophical and scientific discussions have entertained the notion that celestial bodies might possess a form of consciousness. If the Sun is understood as a sentient entity, Malachi's prophecy acquires a fresh nuance. The Sun's prodigious energy and sustaining force could be interpreted as the activity of a patient watcher, awaiting a shift in human behaviour. The phrase "healing in its wings" may then *symbolize the Sun's capacity to restore balance and renewal to the earth's ecosystems*.

Viewing the passage this way raises the question of whether the Sun's involvement is reactive—answering humanity's deeds—or proactive—acting to safeguard the planet regardless of human choice. Malachi's broader context warns of a decisive day of judgment, when the wicked will be

[3] Ref. KJV Bible, and also based on Complete Jewish Bible (ed. D. Stern). See also other prophecies regarding the darkening of the Sun, for instance, book of Joel 2, and Matthew chapter 24, etc.; while admittedly they may or may not be interpreted to be related to prophecy of *healing on its wings*, in Malachi 4:2.

[4] Note: An **intertextual reading** of the Bible is a method that interprets a specific passage by looking at its relationships, echoes, and allusions to other texts—both within the biblical canon and, at times, external historical or scientific records. This approach views the Bible not as a collection of isolated stories, but as a "web" of interconnected meanings where later authors deliberately quote or mirror earlier ones to provide deeper theological context. For example, when applying this to **paleo-geologic catastrophic events**, a reader might connect the "bursting forth of the fountains of the great deep" in Genesis 7:11 with the vivid descriptions of the earth trembling and mountains "skipping like rams" in Psalm 114 or the cosmic upheaval in Job 38. By reading these passages intertextually, one can argue that the biblical writers were not just using poetic metaphors, but were reflecting a shared cultural and textual memory of actual prehistoric tectonic shifts or massive flooding events.

"like stubble" and the righteous will "triumph" (Malachi 4:1-3). Within this framework, the Sun's intervention appears as a divine response to humanity's failure to fulfil its intended stewardship.

A Call to Awakening of Humanity in this Earth

The image of the Sun of righteousness, bearing healing wings, conveys both hope and admonition. It summons humanity to awaken from self-destructive cycles and to align its conduct with the health of the planet. The anticipated solar intervention can be read as an invitation to transform priorities, placing the welfare of the earth and all its creatures at the forefront.

In an era marked by climate crisis, ecological loss, and pervasive social inequities, the resonance of Malachi's vision intensifies. The prophetic declaration—"the Sun of righteousness shall rise with healing in its wings"—offers a compelling reminder that a transformative, perhaps even cosmic, awakening may be on the horizon if we choose to heed its warning.

5. Concluding remark

Pan-Christic biogenesis offers a teleologically oriented narrative that reframes the origin of life as a purposeful act of a conscious cosmos. While it provides an intriguing philosophical lens for interpreting ancient catastrophes and the possible consciousness of celestial bodies, it is acknowledged that the hypothesis as it is, presently lacks empirical support. Continued interdisciplinary discourse may illuminate whether any aspects of planetary consciousness can ever be measured, and how such measurements could reshape our understanding of life in the universe.

Table 6. Future Research (recommended)

Quantify planetary information processing	Develop metrics for planetary-scale entropy flow, magnetohydrodynamic coherence.
Integrate theological/philosophical insights	Collaborative workshops with theologians, philosophers, and physicists, other scientific specialists to clarify terminology.
Explore consciousness-compatible biosignatures	Simulate electromagnetic signatures of self-organized plasma systems and compare with exoplanet observations.
Historical analysis of catastrophes	Conduct multidisciplinary studies (archaeology, geology, textual criticism) to assess any correlation with cultural narratives of divine judgment.

Acknowledgement: Discussions with senior physicists, such as Robert N. Boyd, PhD. and Huping Hu, PhD., are acknowledged. Special gratitude goes to our close friends from UK and Europe alike. Last but not least, part of our discussion here especially on a plausible *pan-Christic biogenesis hypothesis,* has been presented in *First Conference of Philosophy Research,* Hyderabad, 2023 (thanks to Prof. D. Pramod), and also has been published previously in Jurnal Teologi Amreta, and Jurnal Teologi Igreja (2025).[5] Nonetheless, conclusions made here are ours.

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[5] cf. Victor Christianto, "A story of night blooming Cereus flower, Jurnal Igreja, Vol. 2 No. 1 (2025), url: A story of Night Blooming Cereus Flower (Bunga Wijaya Kusuma) | Jurnal Igreja. Victor Christianto & Isak Suria. "An alternative description of paleo-astrogeophysics process and origin of Earth based on Low Temperature Physics," *Jurnal Amreta* Vol 7 No. 2 (2024). url: Vol. 7 No. 2 (2024): How The Holy Spirit renew our Earth and our hearts | Jurnal Teologi Amreta (ISSN: 2599-3100)

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