

**MIRROR GRAVITATIONAL FIELD MATH'S MODEL****\*Lie Chun Pong**

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**Abstract**

Our current understanding of the universe identifies gravity as the primary force governing the structure and motion of celestial bodies. Under its influence, planets form into approximately spherical shapes and follow stable orbits around stars. In our solar system, the Sun acts as the central mass, with all planets, including Earth, revolving around it. While this classical and relativistic framework enables highly accurate predictions of planetary motion, mass distribution, and spatial relationships, it does not fully explain the underlying mechanisms that generate and sustain these motions. Fundamental questions remain regarding the origin of gravitational interaction and the long-term stability of astrophysical systems. To address these gaps, this paper introduces the Mirror Gravitational Field Math's Theory, an innovative conceptual framework intended to extend existing gravitational models and provide new insights into the dynamics of gravitational interaction.

**Keywords:** Mirror Gravitational Field Math's Theory, Mirror gravitational field, Dual-phase gravity; Parity symmetry, Symmetry-breaking, Gravitational duality, Unified field theory, Gravitational interaction, Attractive and repulsive forces, Mirror gravitational–magnetic coupling.

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**INTRODUCTION**

Historically, early cosmological models placed Earth at the center of the universe, with the Sun and Moon revolving around it. Also, at that time, most scientists thought the Earth was a square and not a circular (oval) shape. This geocentric view persisted for centuries until Galileo Galilei provided observational evidence supporting a heliocentric system, demonstrating that Earth is spherical, rotates on its axis, and orbits the Sun. These discoveries fundamentally reshaped scientific understanding and challenged long-standing assumptions. Subsequent questions arose concerning why objects remain bound to Earth despite its motion and curvature. Isaac Newton addressed these issues through his law of universal gravitation, offering a mathematical framework that explained both terrestrial gravity and celestial motion. His work established the foundation of classical mechanics [1]. More than a century later, Albert Einstein [2] advanced this understanding through the theory of general relativity, proposing that massive objects curve spacetime, and that gravitational effects arise from this curvature rather than a conventional force. This theory has been validated through experimental observations, such as gravitational lensing. Despite these advancements, gravity remains incompletely understood. General relativity successfully describes large-scale phenomena but is not fully compatible with quantum mechanics. Key questions, such as the nature of gravitons, the role of dark matter, and the fundamental origin of gravitational interaction, remain unresolved. One of the central challenges in modern physics is the unification of general relativity with quantum theory. This research paper [3] proposes a conceptual framework aimed at bridging this divide by introducing a symmetry-based model of gravitational interaction, potentially contributing to the broader pursuit of a unified theory of fundamental forces.

**Innovative Suggestion**

Although existing theories provide powerful descriptions of gravitational phenomena, they do not fully explain the underlying mechanisms responsible for gravitational interaction. In particular, they lack a unified account that integrates both macroscopic and microscopic perspectives. This research therefore seeks to develop a more comprehensive framework that not only explains gravity more fundamentally but also explores its potential unification with the other fundamental forces. We introduce our innovative Unifying Mirror Gravitational Field Theory, which conceptualizes gravity as emerging from a dual-phase system governed by symmetry principles. In this model, the "mirror field" represents an additional phase of reality that becomes significant under specific gravitational conditions, particularly at microscopic or quantum scales. This dual-phase structure may generate effects analogous to both attraction and repulsion, contributing to the stability of celestial systems. Within this framework, each celestial body is associated with paired mirror fields existing in distinct but symmetrical phases. These phases interact through a mechanism described as mirror-gravitational–magnetic coupling, forming a continuous field that guides both orbital motion and rotational behavior. Rather than viewing gravity solely as curvature or force, this model interprets it as the result of dynamic interactions between coupled phases. The mirror phases are proposed to exhibit both attractive and repulsive components. Their interaction produces a dynamic field state mechanism, which may account for the observed stability and motion of planetary systems. This mechanism offers a new perspective in which orbital trajectories are not only determined by spacetime geometry but also by phase-based interactions within a unified field structure. On the one hand, it is referred to as the "mirror field phase," and on the other hand, it refers to the "mirror field position." A key feature of our innovative theory is parity symmetry and its breaking. In an ideal state, the dual phases exist in equilibrium.

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However, when symmetry is disrupted, an asymmetrical configuration emerges, leading to dynamical effects such as orbital motion and directional stability. Our innovative Mirror Field symmetry-breaking process may provide insight into how motion arises from otherwise balanced systems. Furthermore, the interaction between asymmetric phases may produce effects resembling magnetic-like wave propagation, forming what can be described as a gravitational-magnetic pathway. This pathway could play a role in maintaining planetary alignment and stability while also enabling controlled motion along defined trajectories. Our innovative theory also suggests that such phase interactions could contribute to explaining unresolved phenomena, including gravitational anomalies and effects often attributed to dark matter. While in our hypothesis, this framework opens new avenues for interpreting gravitational behavior beyond conventional models.

So, our new interpretation is that the Mirror Gravitational Field T (MGFT) “Phase” and “Position” Assumption.

MGFT posits two mutually coupled gravitational sectors: the ordinary field  $g_{\mu\nu}$  and the mirror field  $\tilde{g}_{\mu\nu}$ , interacting primarily through mirror phase gravity while respecting parity symmetry  $P: \phi \rightarrow \tilde{\phi}$ .

Our MGFT may resolve Heisenberg uncertainty by defining position in mirror phase ( $\tilde{x}^\mu$ ) and momentum in ordinary phase ( $p_\mu$ ), such that  $[\tilde{x}^\mu, p_\nu] = i\hbar\delta_\nu^\mu$ .

The coupling will hold the position, and the decoupling (symmetry break) will cause the planetary running in the trajectories. The coupling (Mirror gravitational-magnetic coupling) and decoupling, which possess an attractive forces and repulsive forces that drive the motion of the planet trajectory. In other words, we may solve the gravitational mechanism behind with utilizing our innovative (MGFT).

**Innovative Mirror Gravitational Field Model:**



Figure 1. Mirror Gravitational Field

$$\text{InnovativeMirrorFieldModel}, G = \frac{M_T M_\perp}{r^2}$$

$M_T = \text{Mirror Field } T$   
 $M_\perp = \text{Mirror Field } \perp$   
 $r = \text{Radius}$

**Innovative Suggestion Math’s Interpretation:**

$$F = G \frac{MM}{r^2}$$

$$\frac{Fr^2}{MM} = G$$

Let,  $F$ , be constant,  $F = 1$

$$(1)r^2 / MM = G$$

$$r^2 / MM = G$$

$$G = \frac{r^2}{MM}$$

$$\text{InnovativeMirrorFieldModel}, G = \frac{M_T M_\perp}{r^2}$$

$$G = M_T M_\perp \times \frac{1}{r^2}$$

Let,  $M_T M_\perp$ , be 1 over, when symmetry – break, so accordingly,

$$G = \frac{1}{M_T M_\perp} \times \frac{1}{r^2}$$

$$G = \frac{1}{M_T M_\perp \times r^2}$$

$$\frac{r^2}{MM} = \frac{1}{M_T M_\perp \times r^2}$$

Let,  $M_T M_\perp = 2x$

$$\frac{1}{MM} = \frac{1}{2x}$$

$$2x = MM$$

$$x = \frac{MM}{2}$$

$$\text{So, } M_T = \frac{MM}{2} \ \& \ M_\perp = \frac{MM}{2}$$

**CONCLUSION**

Mirror Gravitational Field Theory (MGFT) presents a novel conceptual approach that extends beyond traditional gravitational models by introducing a dual-phase, symmetry-based mechanism (Appendix 1). By incorporating concepts such as parity symmetry, symmetry breaking, and phase interaction, this framework offers a potential pathway toward reconciling general relativity with quantum mechanics. At its core, our theory proposes that gravitational behavior arises from the interaction of coupled phases exhibiting both attractive and repulsive properties. This interaction produces a dynamic mechanism that may account for orbital motion, structural stability, and directional behavior in celestial systems. Our innovative (MGFT) model bridges the gap in between the relativities and the quantum physics. Which (MGFT) may contribute to a deeper understanding of gravity and support the broader goal of unifying the fundamental forces of nature. Hope our research can contribute to the world and the humanity.

## REFERENCES

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## Appendix 1:

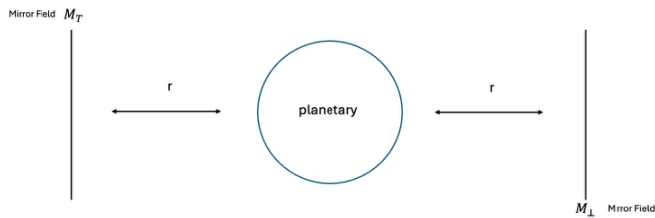


Figure 2: Mirror Field Model (Our Innovative View)

$M_T = \text{Mirror Field } T$

$M_{\perp} = \text{Mirror Field } \perp$

$r = \text{Radius}$

$$\text{InnovativeMirrorFieldModel}, G = \frac{M_T M_{\perp}}{r^2}$$

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