

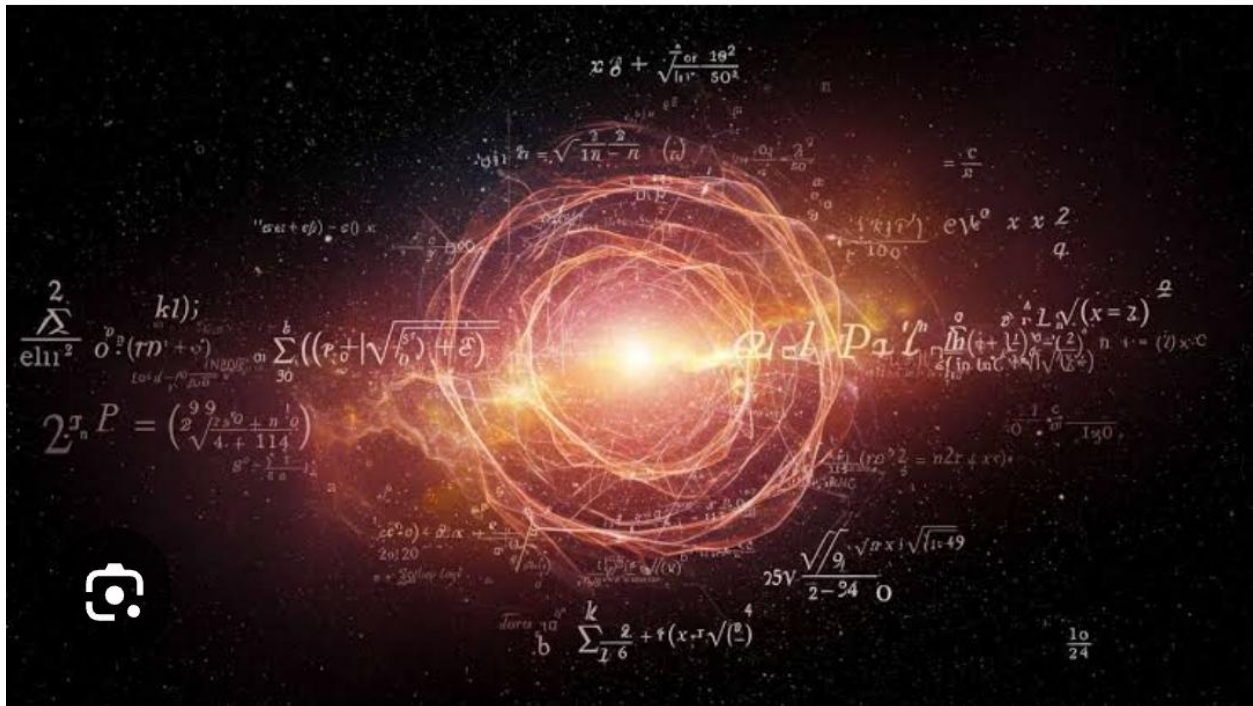


IS REALITY IS A MATHEMATICAL STRUCTURE.

Do CONSCIOUSNESS AND

REALITY FOLLOW HIDDEN MATHEMATICAL STRUCTURE? THE UNIVERSE IS NOT JUST DESCRIBED BY MATHEMATICS BUT IS MADE OF IT .

INTRODUCTION :



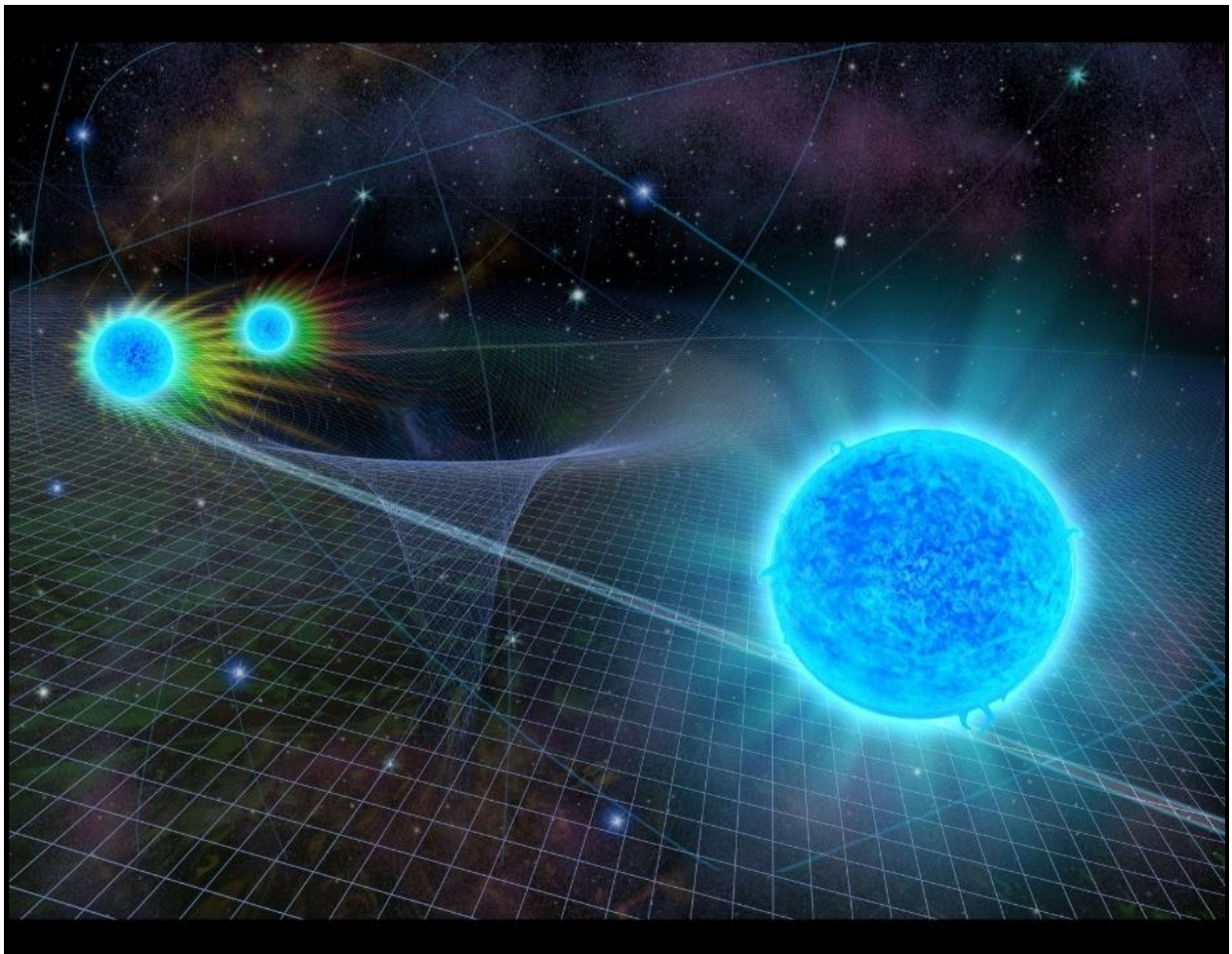
Humans have always searched for satya – the ultimate truth of all creation . In this search , mathematics emerged not just as tool but as a possible key to understand the universe

From understanding the gravitational force between the two celestial bodies to understanding the movement of electrons in an atom , the universe follows the same patterns that are described by abstract mathematics. **The holographic principle** suggests that our perceived 3D reality is a projection from a lower dimensional foundation. Similarly in **Advaita Vedanta** the phenomenal world is seen as Maya (projection) arising from a single reality of brahman – described as the fundamental reality underlying all existence.

In **Quantum Physics** particles are probabilistic , experiments like double slit experiment shows that individual particle outcome like position is unpredictable even with identical initial conditions but it can be expressed mathematically and follows mathematical structure.

The deep connection between mathematics and reality is evident in scientific theories like General Relativity, where gravity is understood not as a force, but as a geometric property of space and time itself. As physicist John Wheeler famously put it: “ **space-time tells matter how to move ; matter tells space-time how to curve** “. This conversation between matter and space is written entirely in the language of tensors and differential geometry.

How can a system designed to describe the observed also explain the observer itself ?
Mathematics has proven remarkably effective in describing external world phenomena , from
physical laws to cosmic structure.



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Geodesic Equation of Motion

Curvature of trajectory

Generalized gradient

$$\frac{d^2 x^a}{ds^2} + \Gamma^a_{bc} \frac{dx^b}{ds} \frac{dx^c}{ds} = 0$$

Christoffel symbol

Path length element

[REDACTED]

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Einstein's Field Equations

(The General Theory of Relativity)

fb/page/Cosmological Astrophysics

$$\underbrace{G_{\mu\nu} + \Lambda g_{\mu\nu}}_{\text{tells matter-energy how to curve space-time}} = \underbrace{\frac{8\pi G}{c^4} T_{\mu\nu}}_{\text{tells matter-energy how to move through curved space-time}}$$

tells matter-energy
how to curve
space-time

tells matter-energy
how to move through
curved space-time

The equations completely changed
how we understood the nature and
evolution of the Universe.

Conclusion: - The most attractive
parts of the Universe are Curvy.

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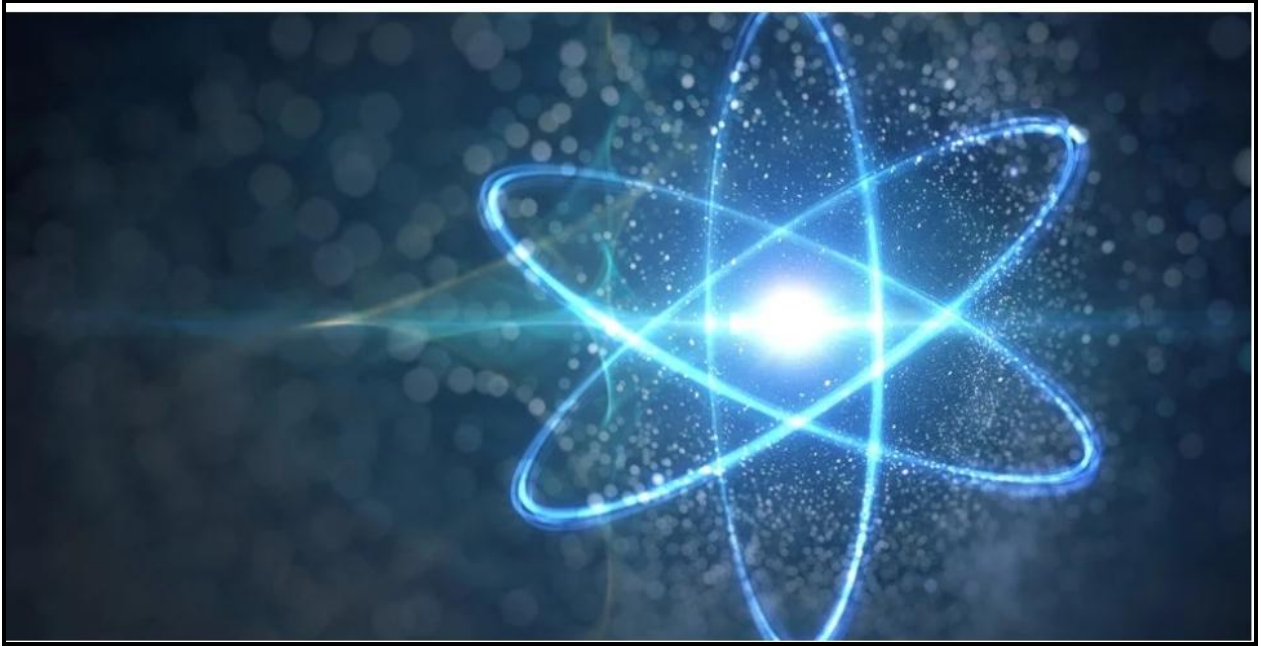
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One-dimensional
wavefunction

$$i\hbar \frac{\partial \Psi}{\partial t} = -\frac{\hbar^2}{2m} \frac{\partial^2 \Psi}{\partial x^2} + V\Psi$$

Imaginary unit $\rightarrow i$

Planck's constant (modified) $\rightarrow \hbar$

Rate of change of wavefunction over time $\rightarrow \frac{\partial \Psi}{\partial t}$

Mass $\rightarrow m$

Curvature of wavefunction over space $\rightarrow \frac{\partial^2 \Psi}{\partial x^2}$

Potential Energy $\rightarrow V\Psi$

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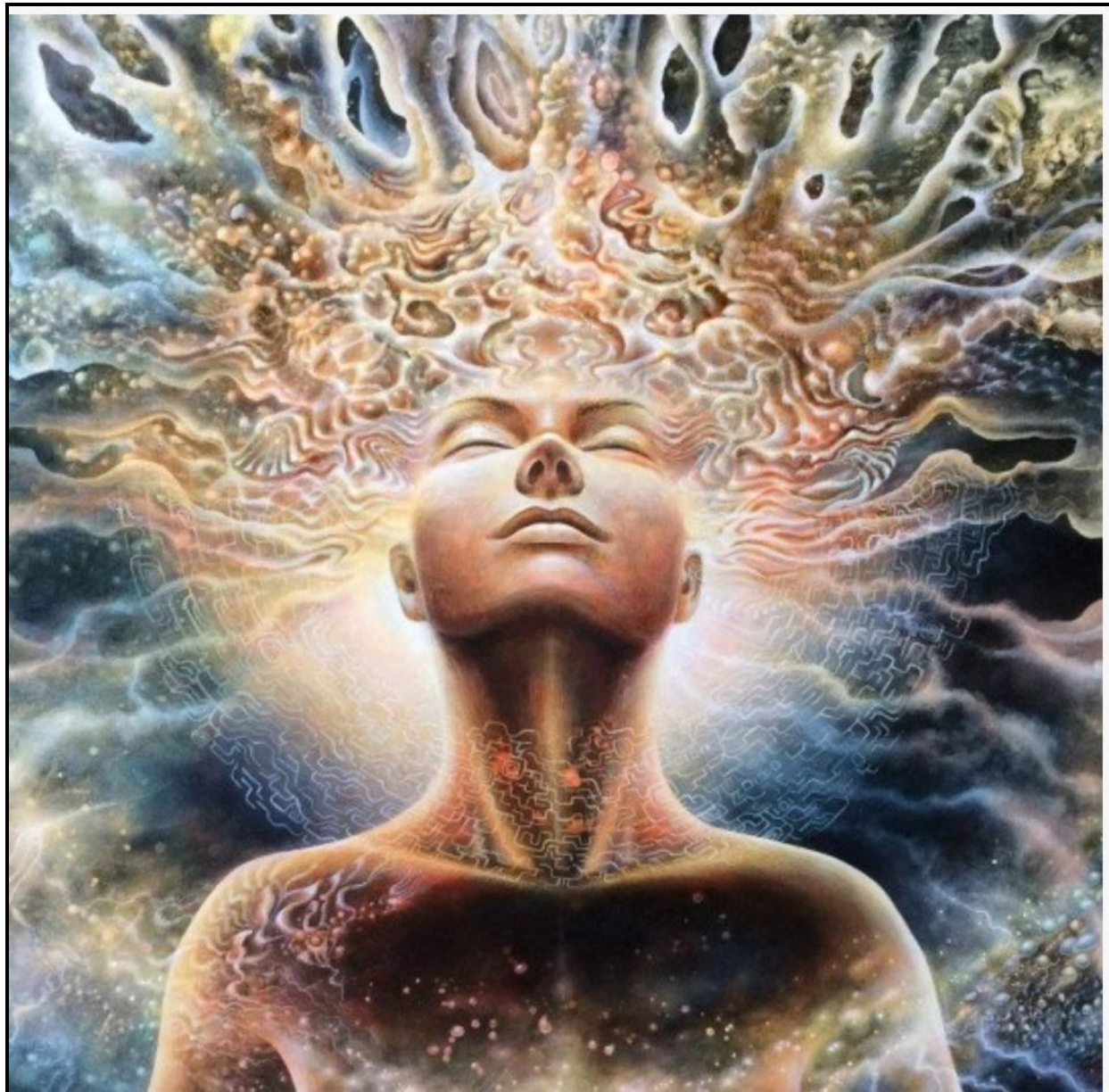
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