

Beyond Observer Physics to Space Physics: Beyond Religion and Science to Philosophy

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Dedicated to:

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A TRAGIC MISUNDERSTANDING

Physicists and astrophysicists believe that **Relativity** and **Quantum Mechanics** are physical theories that tell them how the **Cosmos** works.

IN FACT: They are only **mathematical models** of the **observer's** experiences and measurements. They model **consciousness**, not **Cosmos**.

Result: **Misinterpretations, Contradictions, Confusion, and Nonsense**

This problem is **philosophical**; it **cannot be** resolved by more evidence, experiments, or mathematical models.

The **solution** is also **philosophical**.

Philosophy = Love of Knowledge

The **disciplined** use of our neurological-intuitive and linguistic capabilities to understand the **Cosmos** and **ourselves**.

Method: Create and criticize **theories** to explain the nature and causes of everything.

Mastery of Language: Identify **false** or **inadequate** definitions, propositions, arguments, and theories and replace them with **better** ones (closer **fit** to reality).

Integration of all knowledge and all sciences within a comprehensive **Cosmology**

Logic, mathematics, and the **scientific method** are **tools of philosophy**: To assure that our linguistic formulas **correspond** to **Cosmic** reality.

Our Heritage: Natural-Cosmic Philosophy

Aristotle: *It is the **cause** that we seek in all our inquiries...One who can give no account which includes the **cause** has no scientific knowledge.*

Copernicus: *The **appearance** of daily **revolution** belongs to the heavens, but the **reality** belongs to the Earth.*

Galileo Galilei: *These [Ptolemy's devices] are **not** retained by **philosophical** astronomers who...seek to investigate the **true constitution** of the universe.*

Isaac Newton: *In **philosophical** disquisitions we ought to abstract from our senses and consider **things themselves**, distinct from what are only **sensible measures** of them.*

Charles Darwin: *It has recently been objected that this [theory of evolution] is an **unsafe method of arguing**; but it is a method used...by the greatest **natural philosophers**...the belief in the **revolution of the earth**...was until lately supported by **hardly any direct evidence**.*

Sciences Work within Paradigms

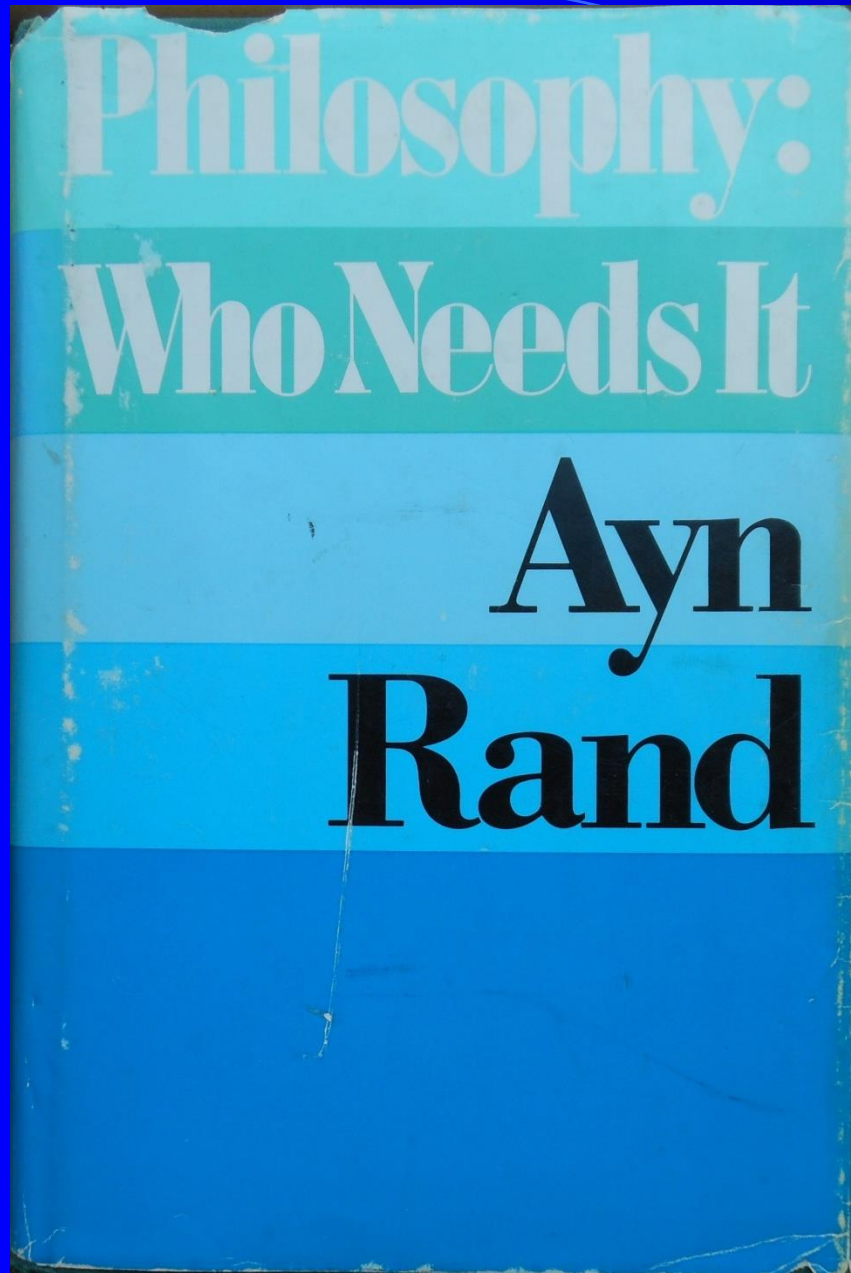
Paradigm: Set of assumptions and theories about a subject and how to study it

Normal Science = Research and reasoning **within** a paradigm

If **false** or **inadequate**: Anomalies accumulate; scientists recategorize or ignore them

Defective paradigms **persist** until replaced—by an act of **philosophical cognition**.

Examples: Copernicus and Darwin replaced **observer-based** and **God-magic** paradigms with **Cosmic** models and theories.



My Journey: From Christianity to **Cosmism**

Two metaphysical-epistemological paradigms:

Primacy of Consciousness (POC)

Primacy of Existence (POE)

POC = Subjectivism: We describe and model the **contents of our consciousness**—our sensations and measurements. (a.k.a. spiritualism, idealism)

POE = Objectivism: We describe, model, and **explain** the **Cosmos** that **produced us** and our **consciousness** and that **causes** our experiences. (a.k.a. **Cosmism**)

Objectivism→Evolutionary Cosmology

Cosmos exists and evolves, producing **hierarchical** levels of complexity:

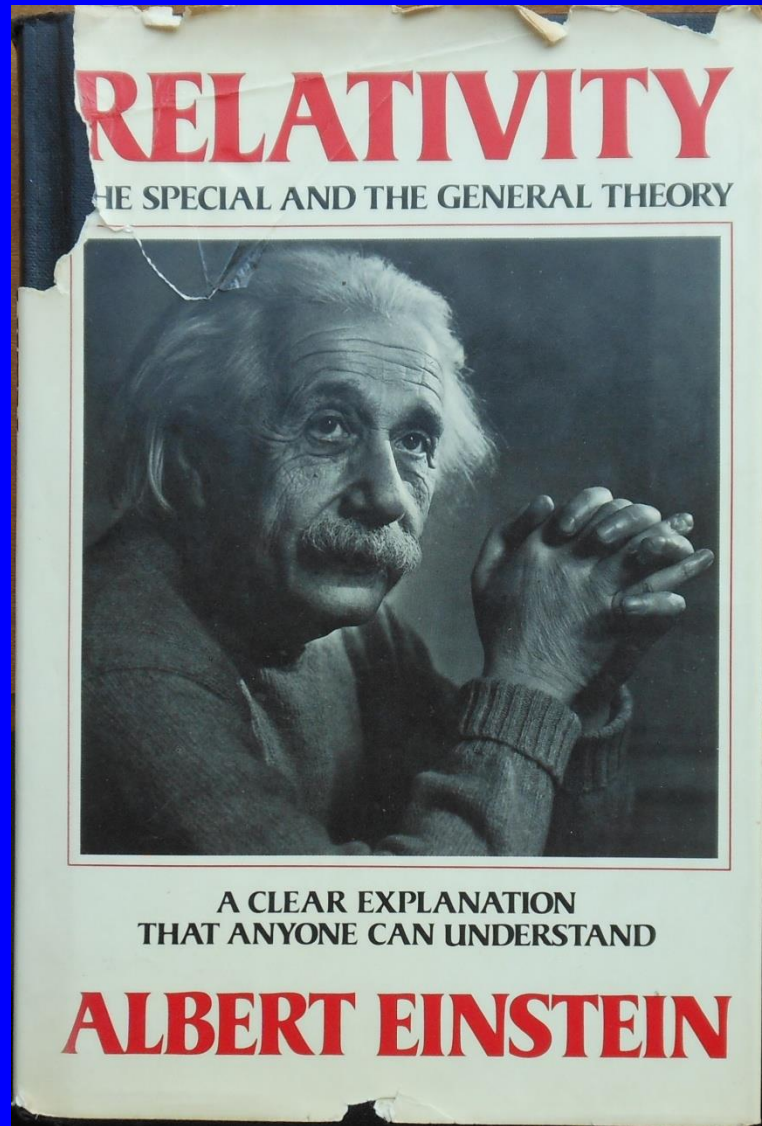
Astrophysicochemical – light, subatomic particles (3), gravity, atoms (90), chemicals (10^8) (**stars, planets, galaxies**)

Biological – molecules, prokaryotes, eukaryotes, multicellular, histologic (**RNA-DNA, bacteria, plants, animals**)

Neuropsychological –sensation, neurons, information processing, brains, emotions, **consciousness** (**higher animals**)

Linguo-Mythic (**language**) → toolmaking, culture, religion, civilization, technology (***Homo sapiens***)

Linguo-Philosophical – **disciplined** linguistic information processing (**7th cent. BC Ionia—Our Potential**)



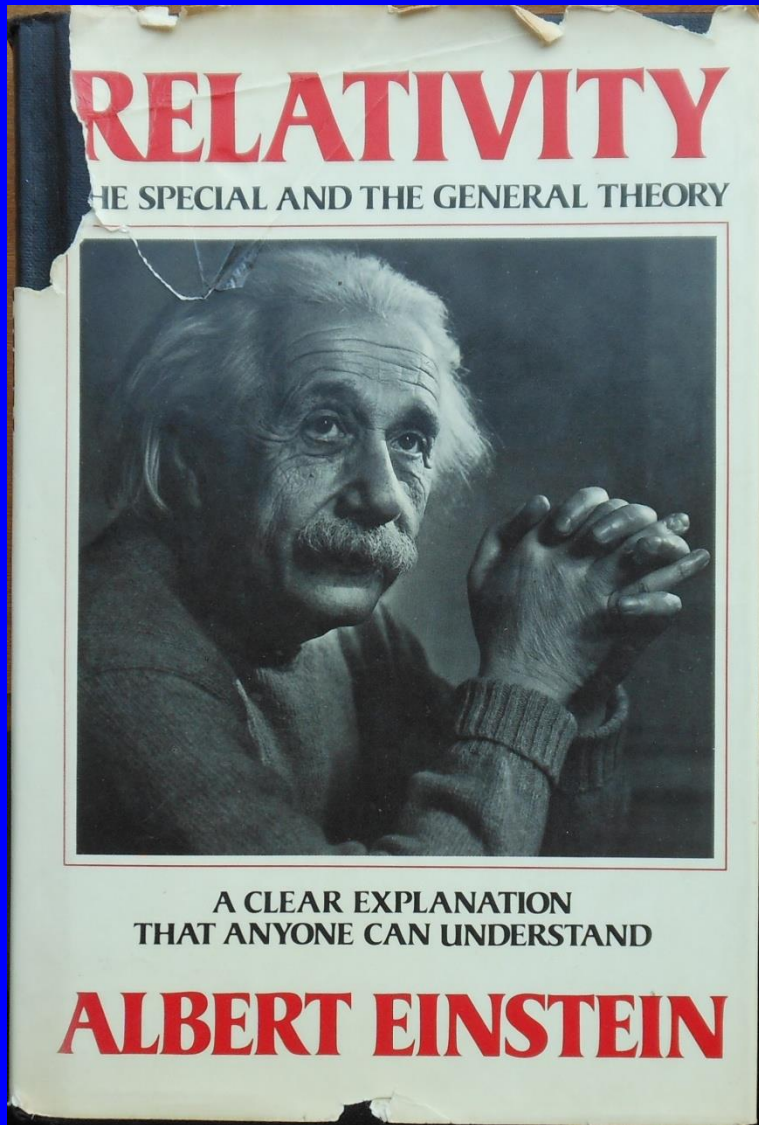
What is **Cosmos** made of?

Mass-Energy and **Space-Time**

JUST MEASUREMENTS!

Made by observers, with their rods, clocks, scales,
photomultipliers, etc.!

Relativity = Primacy of Consciousness = Subjectivism



Space-Time is **NOT** Cosmic Space!

Composed of **observers'** rod-and-clock-measured intervals between **perceived** events:

$$ds^2 = \underbrace{c^2 dt^2}_{\text{Distance}} - \underbrace{(dx^2 + dy^2 + dz^2)}_{\text{Distance}}$$

Assumes that **light** travels at **c** in **every observer's frame**—**not** in any **Cosmic** frame —**Subjectivistic NONSENSE!**

Observer-based four-dimensional mathematical solid:
“Block Universe”, “frozen river” of past, present and future.

Misunderstood: **Nothing** moves in or through **Space-Time!**

*The chronotropic interval has **no physical meaning** or significance.*

Einstein, quoted by T. Levi-Civita, *Nuovo Cimento*, 13, 45 (1936)

Einstein's Subjectivistic Paradigm

Science is methodical thinking directed toward finding *regulative connections* between our sensual experiences.

Ideas and Opinions, p. 50 (1954)

The **only justification** for our concepts and system of concepts is that they serve to **represent** the complex of *experiences*; beyond this they have **no legitimacy**.

The Meaning of Relativity, p 3 (1922)

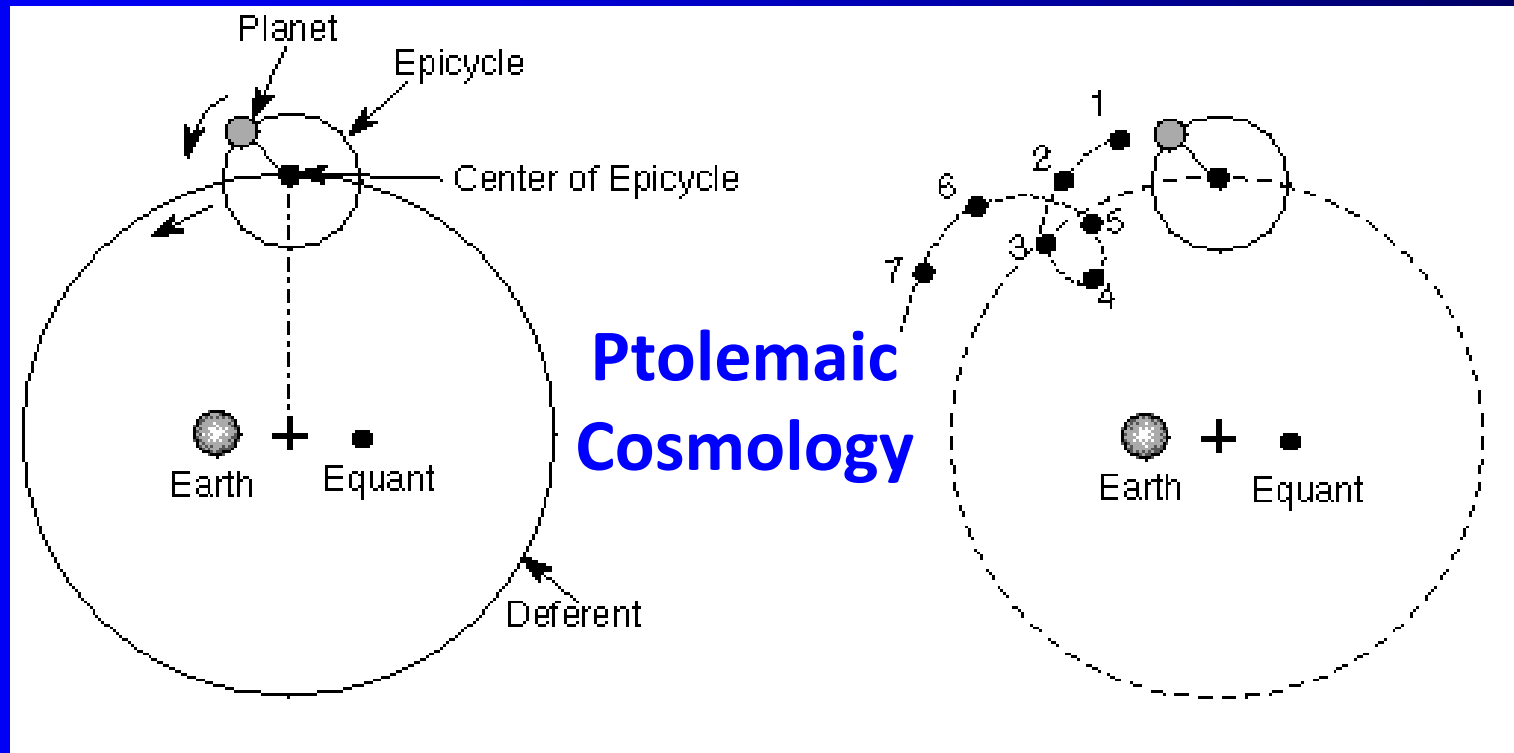
With Relativity... The struggle between the views of **Ptolemy** and **Copernicus** would then be quite **meaningless**. **Either** coordinate system could be used with **equal justification**.

Evolution of Physics, p. 224 (1938)

Einstein tried to **nullify** the Copernican Revolution!

WHY?

Been There: Observer-Based Science



Ptolemy's **ad hoc devices** modeled the Earth observer's experiences and measurements but had **no Cosmic**-physical reality = **DEAD END**: No further discovery/understanding

The observer-based concepts of **Relativity** and **QM** are **epistemologically equivalent**:
Absolute c for every observer, space-time interval, time dilation, photon, virtual particles, particle exchange, wave-function collapse, Higgs field, etc.

Why are We Stuck with Observer-Based Physics?

By 1900: Many difficult questions about **ether-space**, gravity, light, and particles:
Einstein tried to create a **simple** physics without physical **Space**—
without the Newton-Maxwell-Lorentz **inertial-electromagnetic ether**

HOW?

By instead relating phenomena to **observers** or arbitrary frames, and **restricting** physics to
the **mathematical modeling** of observers' sensations and measurements.

WHY?

CLUE: Einstein credited **David Hume** and **Ernst Mach** for his approach to physics.
They were influenced by **Bishop Berkeley**.

Historic Background: Christian Spiritualism vs. Philosophy

3rd to 13th cent: Western Christendom educated by **Aristotle's** works on **logic** →
Western civilization's unique **philosophical competence**

5th cent: Byzantine Emperor Justinian **closed** Aristotle's and Plato's schools in Athens

13th cent: Aristotle's other works surfaced. Western Church **condemned** his **Cosmic** theses

14th cent: Friar **William of Ockham** attempted to free theology from natural philosophy:
*We should **not** posit any **God-independent** causes or mechanisms. We should only **describe** our **experiences** using the **fewest propositions** necessary. (paraphrase)*

Ockham's Razor: The simplest explanation is always "**GOD**" (**MAGIC**)!

Christian Dualism: Spirit World vs. Cosmos

René Descartes: *I think therefore I am* (**POC**). The **Cosmos** could be a hallucination produced by a **demon**.

Meditations on First Philosophy Med. I, para. 10 (1641)

*Theorizing about final [Cosmic] causes is a **sin**.*

Ibid: Med. IV, para. 5, 9

Universal Mathematics: *We should pursue only **certain, indubitable knowledge**—the **mathematical description of our sensations**.* For this he invented his **three-axis coordinate system**.

John Locke: Also more certain of **spiritual** than physical [**Cosmic**] existence (**POC**).

An Essay Concerning Human Understanding, Bk. II, chap. XXIII, para. 15 (1690)

Empiricism: *We can only know the **ideas** presented to us by **our senses** and can **never pass beyond** them to any knowledge of the nature and **hidden causes** of those **ideas**.*

Ibid: para. 29

PROBLEM: Two realities—**Spirit World** and **Cosmos**—How do they coexist and interact?

Berkeley Rejects Dualism: Creates **Science** to Save Christianity from Philosophy



Realized: Copernicus' and Newton's **Cosmic** theories **threatened** spiritualism/religion

Attacked: Newton's space and matter as **atheistic**: Existing **without mind** and **God**

Solution: Spiritual Monism (No Cosmos): *We are spirits and can only know our spiritual experiences.*

Principles of Human Knowledge body, para. 18 (1710)

We exist in a **spiritual simulation** created and run by **God** (as in the movie **The Matrix**, 1999)

Subjective Idealism: The Sun is a God-given **apparition**. Everything is **God-Magic**.

∴ We should only **describe** and **mathematically model** our experiences and measurements

Science should only seek the **rules of God's Matrix** ("Laws of Nature").

David Hume: Agnostic Subjectivism



Skepticism: *We cannot be certain of the existence of Berkeley's **God-Matrix** or a physical **Cosmos**.*

Subjectivism: *We can only know our **ideas** and the **connections** among them. (**POC**)*

*Our belief that an **effect** will follow from a **cause** is merely a **custom** we have acquired by **experience**.*

An Enquiry Concerning Human Understanding, sec. V, part. II, para. 11 (1748)

*We will **never know** the **cause** of such a "**custom**" as **gravity**.*

Ibid: sect. IV, part 1, para. 13

NONSENSE: Rejected Berkeley's **spiritual** metaphysics but kept his **spiritualistic/subjectivistic** epistemology!

Ernst Mach: Modern Subjectivistic Science



Admitted influence of **Berkeley** and **Hume**—and **denied** both **God** and **Cosmos**!

Subjectivism (POC): *The world consists only of our sensations; Laws state relations between sensations.*

Analysis of Sensations, p. 12 (1897)

Redefined theories as **mathematical models** of our sensations and measurements (persists today)

Anti-theory: Refused to believe in **atoms** because they were **not evident** to our senses.

Replaced natural philosophy with **positivistic Science** (capital “S”, Hard Science, Shut up and calculate)

Mach’s Science = Modern Science = Anti-philosophy

Observer-based, merely descriptive, anti-theoretical—**STUPID**

Einstein's Evolution: Beyond Hume and Mach to Berkeley

Beyond Mach: *...in my younger years...Mach's epistemological position also influenced me very greatly...[but] today appears to me to be essentially untenable. For he did not place in correct light the essentially constructive and speculative nature of thought and more especially of scientific thought.* Schlipp

To Berkeley: *Physics is an attempt conceptually to grasp reality as it is thought, independently of its being observed. In this sense, one speaks of "physical reality".* Schlipp (ed). Albert Einstein, *Philosopher-Scientist* (1949)

Berkeley's Matrix: Einstein believed in an “**external world independent of the perceiving subject**”, but defined it **inter-subjectivistically**, as the sum total of all **events** about which **subjects** agree.

Result: Einstein's **concepts**—atoms, lightquantum (photon), absolute c , frames, space-time, etc. **exist only as thought**—*freely created ideas* that help to **organize** our **experiences**.

Einstein's physics = Modern physics = Rules of Berkeley's Matrix

Rejected QM as **incomplete** because it failed to find **deterministic rules of the Matrix**

Origins of Relativity

Protagoras: *Man is the criterion of all objects...* “He posits only what **appears** to each individual, and thus he introduces **relativity**.”

Sextus Empiricus, *Outlines of Pyrrhonism*, I. 216 sq. (3rd cent. AD)

Bishop Berkeley: *We must treat motion **not** as absolute, Cosmic, or real but as **merely relative** to **ourselves** or to other objects in our **consciousness**, and treat **time** as the succession of **events** in our **consciousness**.* (paraphrase) *Principles of Human Knowledge* para. 112., para. 98 (1710)

Ernst Mach: Newton’s absolute space and motion “*devoid of content*”; we **only know** “**relative** spaces and motions”. Those who share this view are “**relativists**”.

The Science of Mechanics, 283, 293 (1883)

POC = Spiritualism = Denial of a physical **Cosmos!**

PROOF: No **Cosmos** in Special Relativity

The Restricted Principle of Relativity: *All laws of Nature are the **same** in all **coordinate systems (CSs)** moving uniformly relative to each other.*

The Law of Propagation of Light: *The velocity of light in vacuo is a law of Nature for **all CSs**. (**Absolute c** for every observer)*

Lorentz Covariance: *Differences observed between moving **CSs** are described by the Lorentz transformations*

There is...**no such thing** as an **independently existing** [**Cosmic**] trajectory, but only a trajectory **relative** to a particular body of reference (**CS**). Relativity, The Special and General Theory, p. 10 (1920)

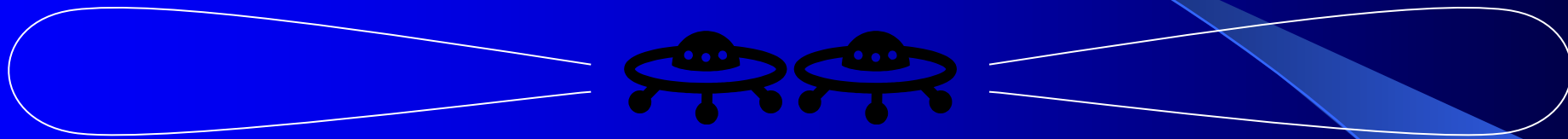
Light's motion **not** related to any **Cosmic** frame(s), i.e., **NOT** to planets, stars, or galaxies!

No physical **Space** = No physical **Cosmos** = No physical **causation**

Rules of the Matrix = Bishop Berkeley's Physics!

Relativity Never Worked—Twin Paradox

“Relativity” **means** that all motion is **merely relative** to **any** frame of reference.



Any two frames in **relative** motion have **identical trajectories** in each other's **CSs**.

Each should see the **other's** clock run slow and length contracted (**contradiction**).

To “resolve the paradox” one must **break the symmetry** with a **third** (independent-**Cosmic**) frame

This **violates Relativity**—so is done **surreptitiously** (e.g., “**absolute**” acceleration, “changing frames”, etc.)

FACT: There is always **asymmetry** and **inequality** among frames = **NO RELATIVITY!**

Physicists do not understand Relativity! They are confused.

No **Cosmos** in General Relativity

Acceleration/rotation remained “**absolute**”—needed to be “relativized”

General Principle of Relativity: “All **laws of Nature** are the **same** in **all arbitrary frames**, no matter what their state of motion”

NON-STARTER. IMPOSSIBLE. RIDICULOUS.

Acceleration/rotation are “**absolute**”, **physical**, **Cosmic**. One **cannot** relate “laws of Nature” to **rotating/tumbling CSs**! (Recall the Copernican Revolution!)

Confusion: **GR morphed** into a geometrical model of **matter’s** effect on “frames” in its surrounding space.
(A **quasi-objective** model; **NOT A GENERALIZED RELATIVITY**)

“Space-time curvature” is a **geometrical description** of gravity’s effects on the **observer’s** rod-and-clock-measured intervals: **NOT** a theory of gravity!

GR is **observer-contaminated**: Light moves at c in all free-falling observers’ frames!

No Cosmos in Quantum Mechanics

Einstein created **QM** in 1905 with his **lightquantum**

Pure Machian Science

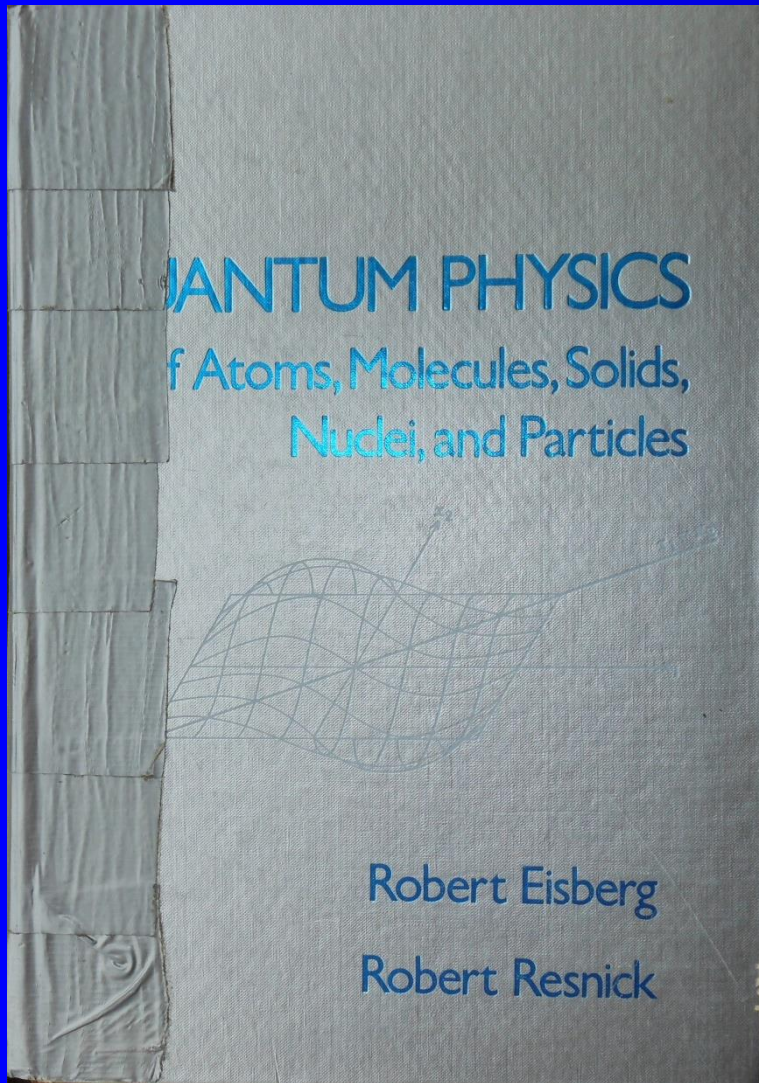
*Quantum mechanics...rejects as **meaningless and useless** the notion that behind the universe of our perception there lies a **hidden objective world ruled by causality**; instead, it confines itself to the **description** of the **relations among perceptions**.*

Ad hoc observer-based **model**, **NOT** a physical theory.

Models observers' "**information**", not **Cosmos**.

All quantum "spookiness" stems from its **bizarre** epistemology:

Subjectivism IN: Subjectivism OUT



Valerie: "Best QM textbook"

Einstein's Metaphysics

Mathematical Idealist: *Nature is the realization of the simplest conceivable **mathematical** ideas.*

Ideas and Opinions, 274 (1954)

Berkeleyan Theist: **God** is “a superior **mind** that reveals itself in the **world of experience**.”

Ideas and Opinions, 262 (1954)

Forbade physical theory: *According to the general theory of relativity **space** is **endowed with physical qualities**; ...But this **ether may not** be thought of...as consisting of **parts** which may be tracked through time. The idea of **motion may not** be applied to it.*

Ether and the Theory of Relativity (1920)

Note to self: Let's give **Space parts** and **motion**!

Einstein's Legacy: Contradiction and Confusion

Admitted that in epistemology, he was an “**unscrupulous opportunist**”, resorting to realism, idealism, positivism, and Platonism as the situation seemed to require.

Albert Einstein: Philosopher-Scientist, p. 684

Realized that he **failed** to eliminate **Ether-Space** from physics, but clung to **Relativity**

Inconsistency is **bad** philosophy: Physicists are **not** philosophers—have been **fooled**

Academic “philosophers” **unable/afraid** to criticize Relativity, QM, and positivistic **Science**

Acceptance of subjectivism, contradiction, and unreality→**Destruction** of **philosophy**

Result: 120-year **corruption** of physics and philosophy

The Costs of Anti-Philosophical Science

Humans unable to **identify** contradictions, fallacies, flawed arguments

Unable to **question** and **replace false** ideas/theories: **Stuck** with **false** paradigms!

Unable to **understand causes** that are **not** immediately obvious.

Unable to **replace religion** with **philosophical Cosmism** (just as Bishop Berkeley intended)

FALSE PARDIGMS: In anthropology, psychology, economics, politics, medicine, etc., etc...

CHILD ABUSE: **Churching** and **Schooling destroy** curiosity and philosophical development

Western civilization is rapidly deteriorating because SCIENCE is STUPIDITY

SOLUTION: A Proper Metaphysics

Instead of Berkeleyan/Humean/Machian spiritualism/idealism:

Cosmism

Cosmos exists and evolves. It produced us humans and our language-enhanced consciousness. Through us **Cosmos** has become linguistically self-conscious.

Cosmism is the **best theory** to explain our existence and experiences.

Foundational Assumption: Cannot be proven, cannot be falsified.

New language for philosophical **Cosmology**: We should capitalize proper nouns: “**Cosmos**”, “Sun”, “Earth” “Moon”, etc.
We should also drop “the” before the names of the most important objects in our existence!

A Proper Epistemology

Instead of Berkeleyan/Humean/Machian **subjectivism**:

objectivism

We must **relate** our experiences and measurements to **Cosmic** entities and frames to produce a **model** of the **Cosmos**.

Only objectivistic-**Cosmic** models can inform causal-**Cosmic** theories!
(e.g., Copernican vs. the Ptolemaic System)

What Is Actually Proven? Not Relativity!

1. Lorentz transformations—when applied to the correct **Cosmic** frame(s)
2. Light is a wave in electromagnetic (EM) **Space**, has quantized interactions with electrons.
3. Matter cannot move at c through EM **Space**.
4. Matter alters its surrounding inertial-EM **Space** creating gravity and its own inertia.
5. Velocity in **Space** and gravity redshift atomic/nuclear spectra; i.e., **slow** atomic clocks.

We should capitalize **Cosmic**-physical “**Space**” to differentiate it from mathematical and imaginary spaces.

Easy: Replace Relativity and QM with Space Theory

2025: We can restore the **suppressed** inertial-EM **Space** to physics—create a **working theory** of **Space** and its role in electromagnetism, particle formation, gravity, and inertia.

1. **Replace** Special Relativity with **Lorentz Ether Theory**^{1,2}
2. **Replace** General Relativity with **Flowing Space**³
3. **Replace** Quantum Electrodynamics with an **EM wave theory** of light and electrons and their interactions.⁴

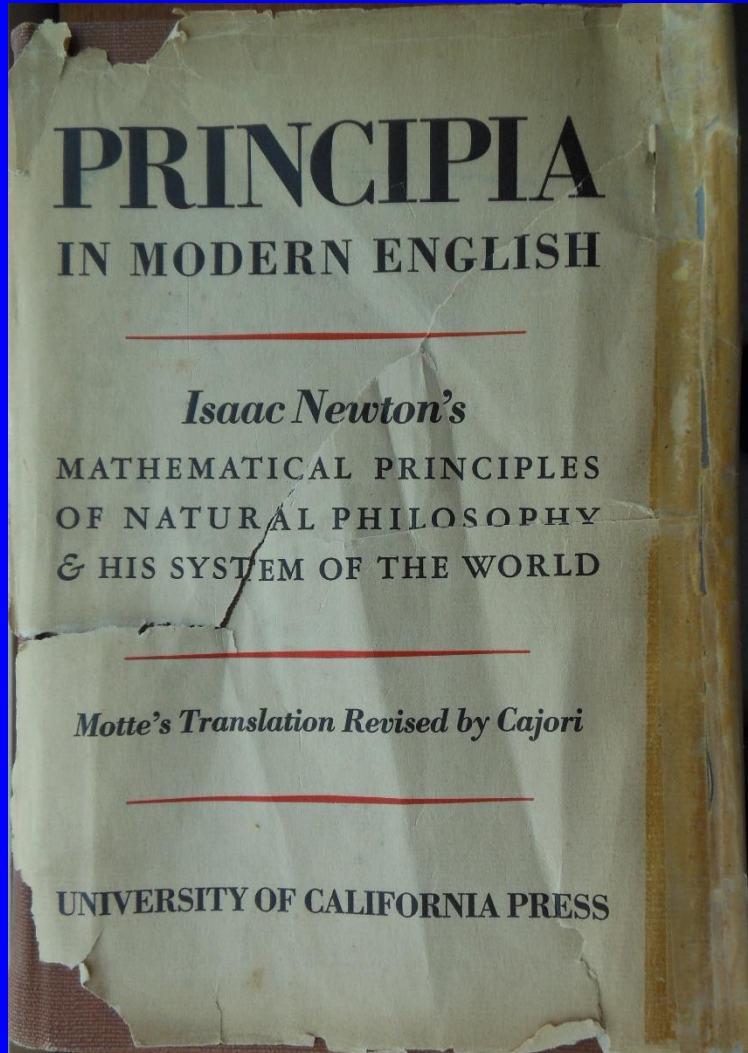
¹Builder, G. Ether and Relativity. *Aust. J. Phys.* 11, 279-297 (1958) [10.1071/PH5802790](https://doi.org/10.1071/PH5802790)

²Mansouri, R., Sexl, R.U. A Test Theory of Special Relativity: I. Simultaneity and Clock Synchronization. *Gen. Rel. Gravit.* 8, 497-513 (1977) [10.1007/BF00762634](https://doi.org/10.1007/BF00762634)

³Lindner H.H. Beyond Newton and Einstein to flowing space, *Phys. Essays* 25(4), 500-509 (2012) [10.4006/0836-1398-25.4.500](https://doi.org/10.4006/0836-1398-25.4.500)

⁴Lindner H.H. A QED-compatible Wave Theory of Light, Electrons, and their Interactions", *Proc. SPIE*, vol. 8121, 2011, p. 81210X-1. [10.1117/12.893053](https://doi.org/10.1117/12.893053)

Starting Point: Newton's Inertial Space



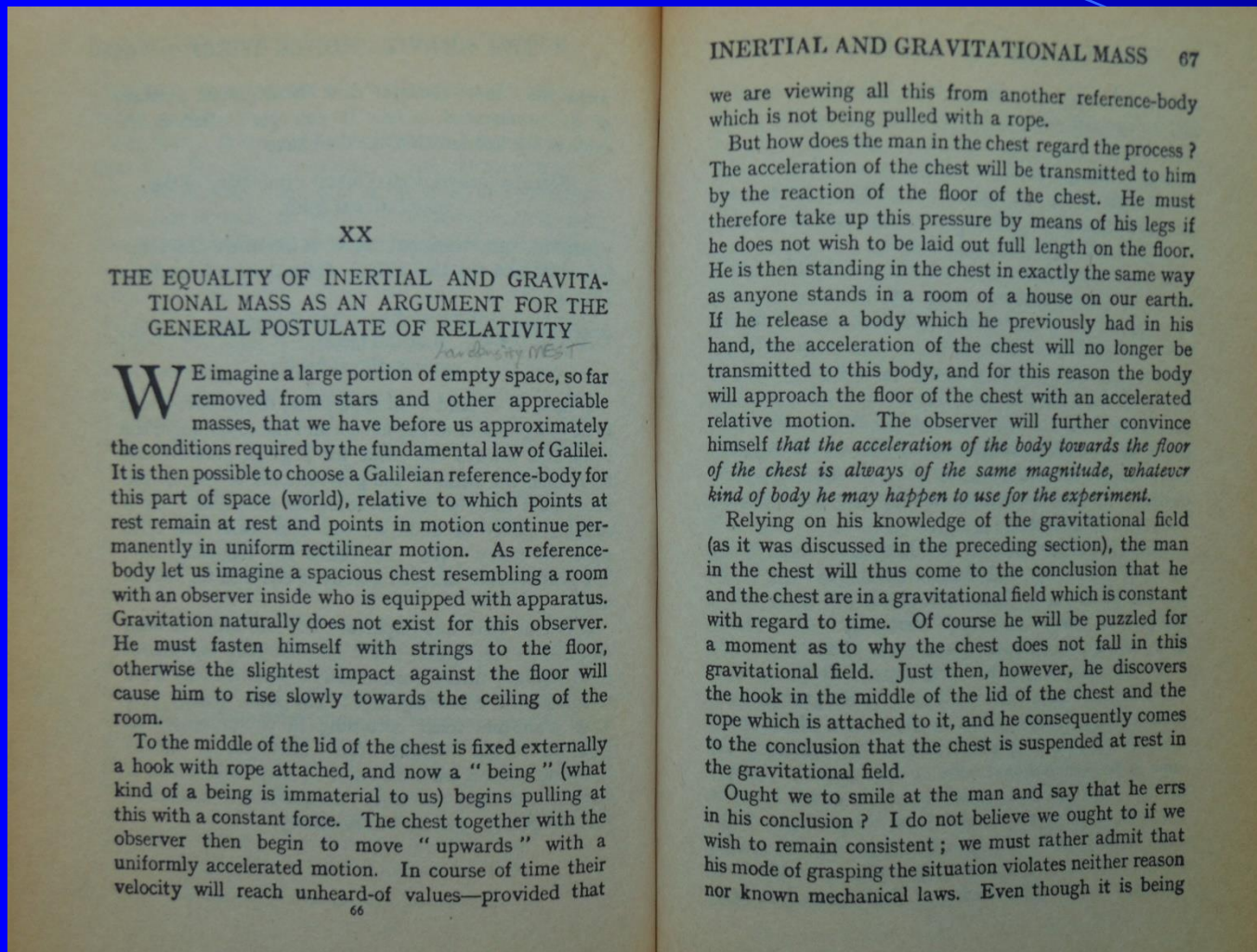
Misunderstood Cosmic model

Inertial medium: A single, Euclidean **Cosmic Space** that **resists** the **forced acceleration** of matter, but offers no resistance to matter's **uniform velocity**

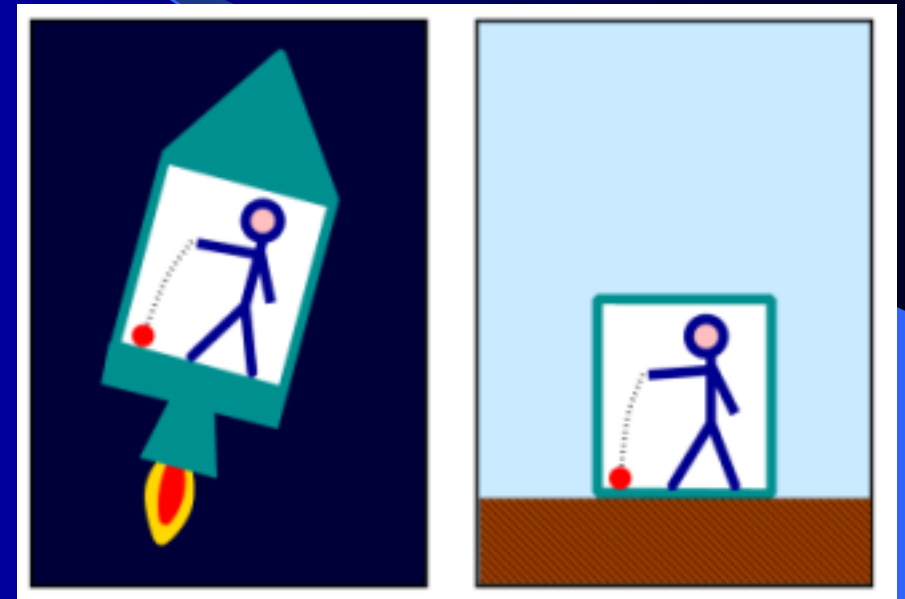
An Ether theory: All matter has a **definite velocity** in **Space** even if we can't determine it.

Implication: Matter cannot **naturally accelerate** wrt **Space**. IF **Space** accelerates in some direction, matter must **accelerate with it**; would **not** "feel" acceleration.

Credit Due: Einstein Found the Key to Gravity



"Man in Chest" gedanken



Principle of Equivalence (POE) of inertial and gravitational **acceleration** (not "mass")

Newton's Space + Einstein's POE → Flowing Space

Being **accelerated** by a rocket in **Space** is **identical** to being on Earth's surface.

*...physical equivalence of a gravitational field and a corresponding **acceleration** of **the reference system**.*¹

Same Physical **Effect** ⇒ Same Physical **Cause: Acceleration** wrt Newton's inertial **Space**!

∴ Newton's **Space** is a **FLUID** that **accelerates** as it **FLOWS** into all matter as into a sink!

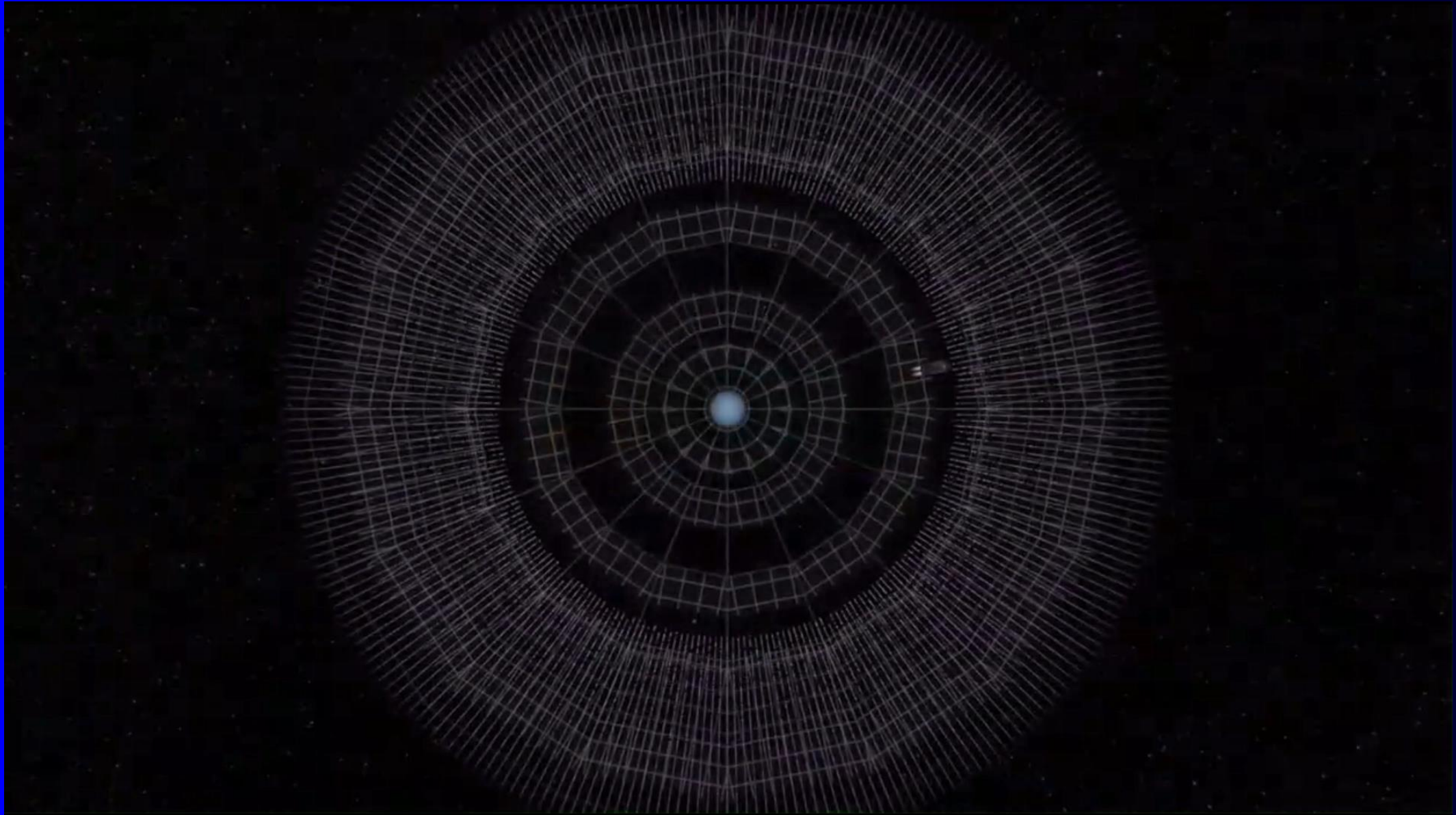
$$a = 4\pi GM / 4\pi r^2 = GM / r^2$$

Free fall is the state of **non-acceleration** wrt Earthward-**accelerating** inertial **Space**.

¹Einstein, A. On the Relativity Principle and the Conclusions Drawn From It. *Jahrb. Radio. Elektron.* 4:411–462 (1907)

Dialect: Flowing Space

[The River Model of General Relativity \(youtube.com\)](https://www.youtube.com/watch?v=Z1U01380850)



Inertial Space is also the Electromagnetic Medium

Space is also the Maxwell-Lorentz electromagnetic ether

Space-as-EM-medium was NOT disproved by the Null Michelson-Morley experiment

Two viable explanations; both now appear to be true:

1. **George Stokes: No ether wind:**¹ Earth entrains its surrounding Space into its orbital free-fall motion
2. **Hendrick Lorentz: Lorentz ether theory (LET):**² $\pm 30 \text{ km/s}$ ether wind exists but is concealed by:
Increased light travel time across the ether flow (“time dilation”) compensated by
Physical length contraction of device in direction of motion through the ether

LET works and produces no paradoxes.^{3,4} SR is an observer-based corruption of LET.

¹Stokes, G. On the Aberration of Light. *Philos. Mag.* 27, 9-15 (1845)

²Lorentz, H.A. *Attempt of a Theory of Electrical and Optical Phenomena in Moving Bodies*, E. J. Brill, Leiden (1895)

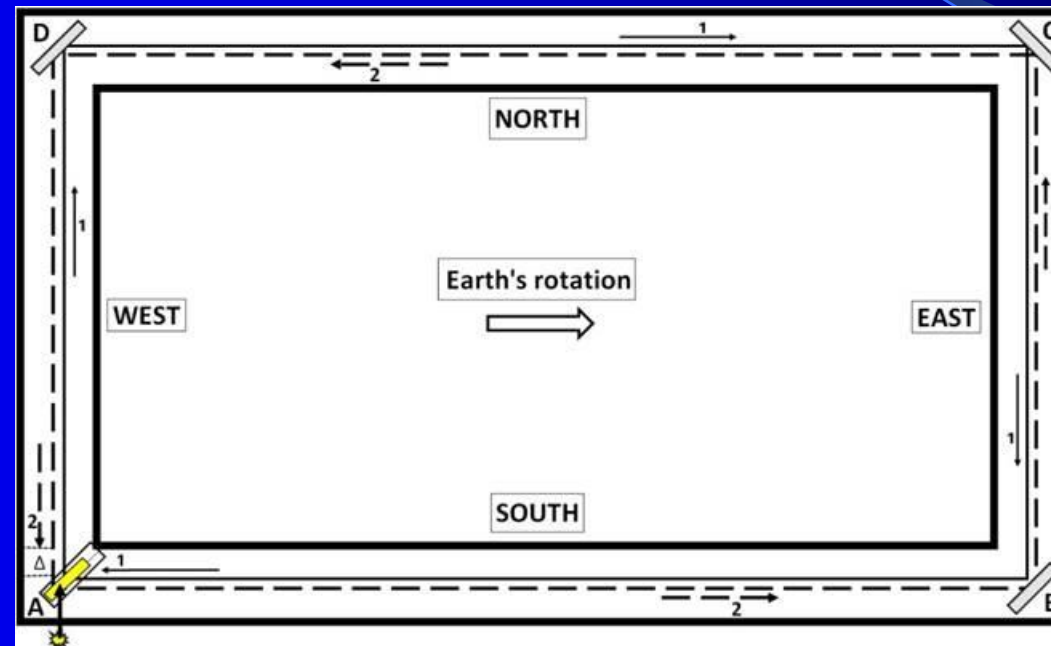
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⁴Mansouri, R., Sexl, R.U. A Test Theory of Special Relativity: I. Simultaneity and Clock Synchronization. *Gen. Rel. Gravit.* 8, 497-513 (1977) [10.1007/BF00762634](https://doi.org/10.1007/BF00762634)

Rotation Proves that Space is the Inertial/EM Medium

Michelson-Gale Experiment:¹ 2000'x1000' rectangular interferometer in Illinois

Fringe shift \Rightarrow Light propagates in a **medium** that is **not rotating** with Earth (Sun-star irrotational).



Sagnac effect, laser gyroscopes

Rotation wrt **Space** is **inertially** and **electromagnetically** “absolute”, physical, real, **Cosmic**

NO GENERAL RELATIVITY; NO RELATIVITY ANYWHERE!

¹Michelson, A., Gale, H. The Effect of the Earth's Rotation on the Velocity of Light, Part II. *Astrophys. J.* 61, 140 (1925) [10.1086/142879](https://doi.org/10.1086/142879)

What is the Gravitational Flow's Velocity?

Work needed to move a test mass, m_0 , away from mass, M , to infinite distance:

$$W = \int_{r_0}^{\infty} G M m_0 / r^2 dr = U_e \rightarrow K_e - U_e = \frac{1}{2} m_0 v^2 - G M m_0 / r = 0$$

$$v_r^2 = 2GM/r \rightarrow v_r = \sqrt{2GM/r}$$

v_r = **Newton's escape velocity** = **11.2km/s** at Earth's surface.

FACT: Atomic clocks on Earth's surface **slow** as if they are moving at **11.2km/s** through **Space!**

Perfectly **models** and **explains** the **electromagnetic** (“relativistic”) aspects of gravity

Velocity in Space Redshifts Atomic Spectra!

Lorentz velocity redshift: $\Delta v/v = 1 - \sqrt{1 - v^2/c^2}$

In **Flowing Space** gravity: $v_{esc}^2 = 2GM/r$, therefore

Gravitational redshift: $\Delta v/v = 1 - \sqrt{(1 - 2GM/rc^2)}$

Atomic redshift/clock slowing has **one** physical cause: **Velocity in EM Space**

⇒ **Expanded** Principle of Equivalence of **Inertial** and **Gravitational**
Acceleration and Velocity!

Simplification and **Unification: Integrates** microcosm and macrocosm (“QM and GR”)!

Dialect: Light Clock

[What Time Dilation ACTUALLY IS in Relativity \(youtube.com\)](https://www.youtube.com/watch?v=9bZkpjw69r0)



Flowing Space Explains Black Holes

When EM **Space** flows into a mass @ $\geq c$, EM waves cannot escape:

$$\text{Set } v_{esc} = c \rightarrow \text{Schwarzschild radius} = r_s = 2GM/c^2$$

$$\text{Compare to: } ds^2 = -\left(1 - \frac{2GM}{rc^2}\right)(dx^0)^2 + \left(1 - \frac{2GM}{rc^2}\right)^{-1}dr^2 + r^2(d\theta^2 + \sin^2\theta d\phi^2)$$

GR field equations **unworkable**; physicists use **Flowing Space**!

$$\text{Bending of light in a gravitational field: } \theta = 2GM/rc^2$$

$$\text{Light orbit radius: } r = 3GM/c^2$$

v^2 is Everywhere!

We have Always been Detecting Spatial Motion!

Spatial Acceleration

The acceleration of any test mass in free-fall reveals the acceleration of Space at that location. Accelerometers measure acceleration wrt Cosmic Space.

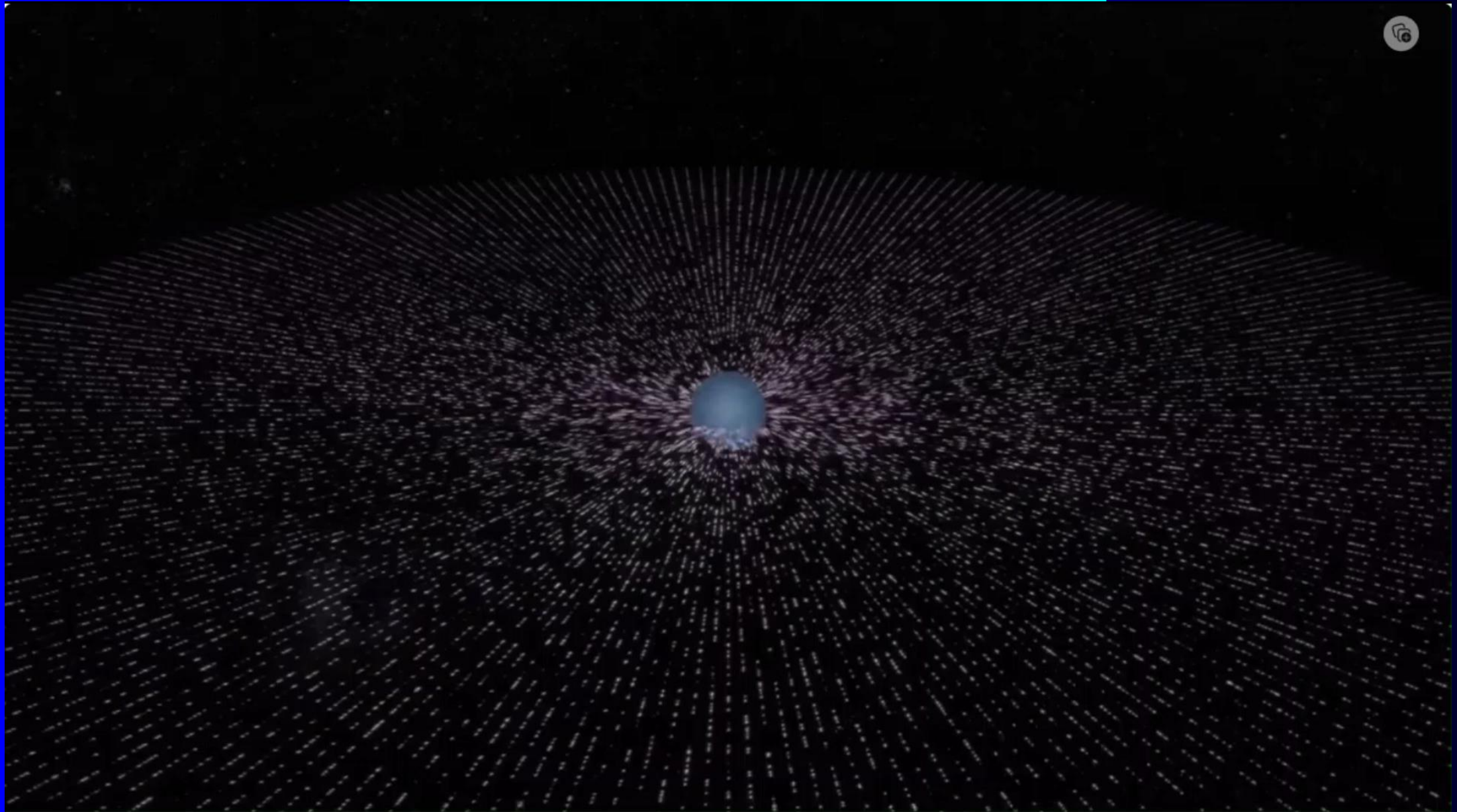
Spatial Speed

The redshift of atomic spectra (slowing of atomic clocks) reveals their speed wrt Space.

NO RELATIVITY ANYWHERE!

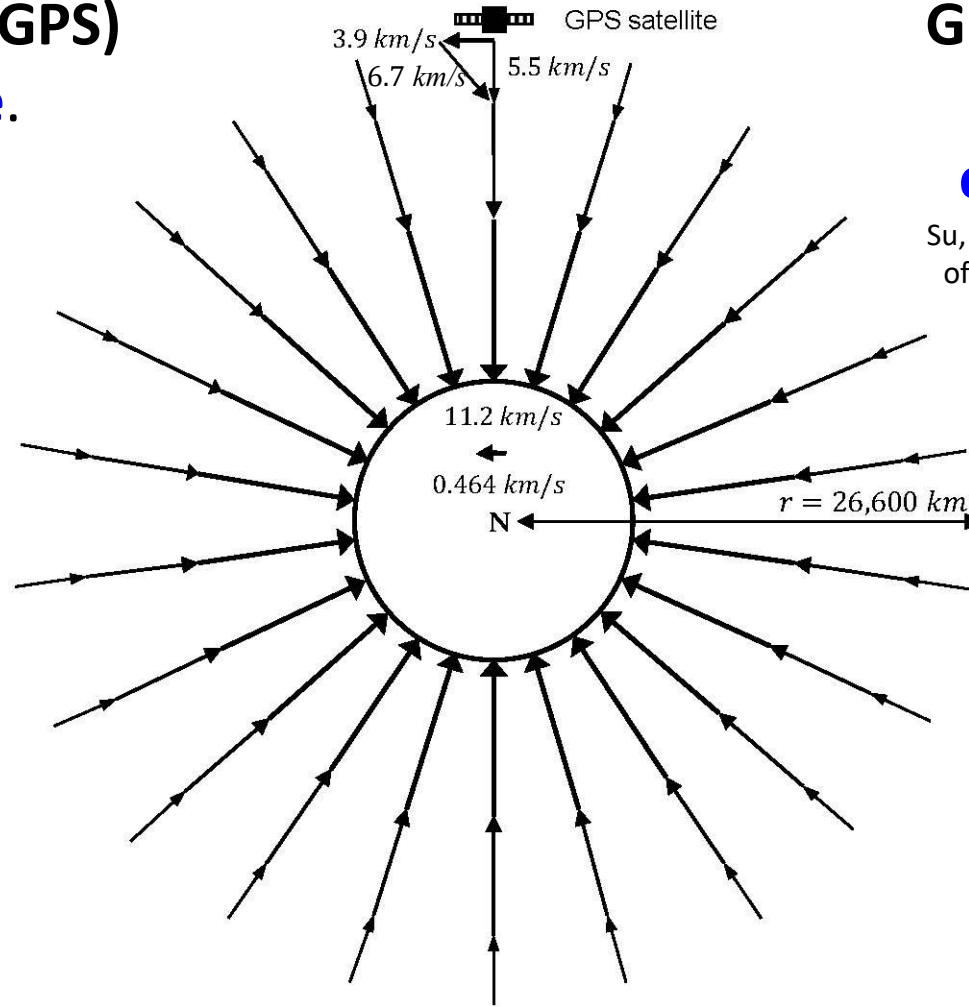
Dialect: Matter and Light moving in Flowing Space

[The River Model of General Relativity \(youtube.com\)](#)



Global Positioning System (GPS)
works by **Flowing Space**.
No Relativity Here!

30 km/s Orbital Motion



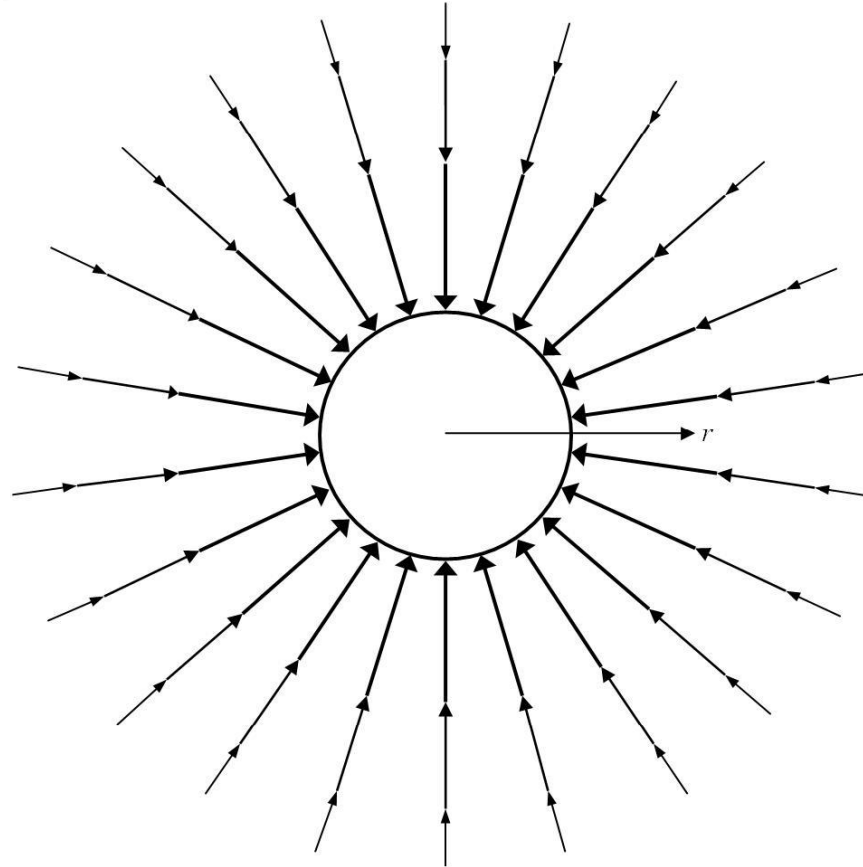
GPS atomic clocks slowed by
their **speed** in Earth's
entrained inflowing Space

Su, C-C. A local-ether [entrainment] model of propagation of electromagnetic wave, Eur. Phys. J. C, 2001, v.21, 701

30 km/s Orbital Motion

Earth and its **entrained (co-moving) sink-flow field** moving through Sun's **entrained flow field**

The atomic clock of a GPS satellite is subjected to a 5.5 km/s **Spatial inflow** and so runs faster than the Earth surface clock (11.2 km/s).
Satellite's clock also slowed by its 3.9 km/s **tangential** orbital velocity in the Earth-entrained flow-field.
Resultant Spatial speed is 6.7 km/s \Rightarrow correct GPS atomic clock slowing.



Additional predictions not found in GR

1. **Anisotropic light propagation:** Light will rise/fall in gravitational field at $c \pm v_{esc}$
2. **Anisotropic atomic clock slowing:** Clocks rising against the flow will have higher **Spatial** velocities and **run slower**; clocks falling with the flow will have lower **Spatial** velocities and **run faster**. An atomic clock falling from rest at infinity will remain at **rest in Space** and **run fastest**.

Q: Wouldn't a radially inflowing **Space** create an **overhead—horizon anisotropy** in GPS signal paths?

Yes: **≈2.4mm**
(within known margin of error)

Similar result for **VLBI**
(Very Long Baseline Interferometry)

Some calculations regarding the operation of the GPS in flowing space.

Author: Valerie Lindner

Date: 07/16/15

The purpose of this project was to determine whether flowing space (specifically, the resultant anisotropy of light propagation) produces noticeable errors in GPS signal travel times (particularly between signals from satellites at different zenith angles) if the GPS is designed to assume that the speed of light is isotropic and equal to c .

Theory

In Figure 1, we consider a GPS receiver (REC) on the surface of the Earth receiving signals from two GPS satellites: One directly above the receiver (S1) and another on the horizon (S2). The orbital radii of the GPS satellites is $d = 26,600 \text{ km}$; the radius of the earth is $R = 6371 \text{ km}$; and the distance to the satellite on the horizon is $X_d = \sqrt{d^2 - R^2}$. The center of the earth is the origin of a Cartesian coordinate system (x, y) .

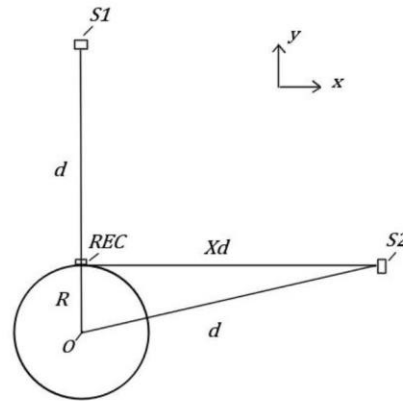


Figure 1 Geometry of the problem. S1 and S2 are GPS satellites communicating with the receiver REC on the Earth.

At the same time, the Earth lies in the center of a radial spatial inflow field given by (1)

$$\mathbf{w} = -\sqrt{\frac{2GM}{r}} \hat{\mathbf{r}}$$

Light moves at c relative to space; that is, if \mathbf{v} is the velocity of a light signal relative to Earth, then (2)

Also reproduced the **Shapiro Time Delay**

Flowing Space Reproduces GR's Successes—More Simply

- Painlevé, P.** [Classical Mechanics and the Theory of Relativity], *C. R. Acad. Sci.* **173**, 677-680 (1921)
- Gullstrand, A.** [General solution of the static body problem in Einstein's gravitation theory]. *Astronomi och Fysik*, **16**(8), 1-15 (1922)
- Ives, H.E.** Behavior of an Interferometer in a Gravitational field, *J. Opt. Soc. Am.* **29**, 183-187 (1939) [10.1364/JOSA.29.000183](https://doi.org/10.1364/JOSA.29.000183)
- Ives, H.E.** The Behavior of an Interferometer in a Gravitational Field. II. *J. Opt. Soc. Am.* **38**, 413-416 (1947) [10.1364/JOSA.38.000413](https://doi.org/10.1364/JOSA.38.000413)
- Kirkwood, R.** The Physical Basis of Gravitation. *Phys. Rev.* **92**, 1557-1562 (1953) [10.1103/PhysRev.92.1557](https://doi.org/10.1103/PhysRev.92.1557)
- Kirkwood, R.** Gravitational field equations. *Phys. Rev.* **95**, 1051-1056 (1954) [10.1103/PhysRev.95.1051](https://doi.org/10.1103/PhysRev.95.1051)
- Kirkwood, R.** The physics of a metric space with a time variable. *Int J Theor Phys* **7**, 391–414 (1973) [10.1007/BF00713242](https://doi.org/10.1007/BF00713242)
- Martin, T.** On the Motion of Free Material Test Particles in Arbitrary Spatial Flows (1999) [gr-qc/9807006](https://arxiv.org/abs/gr-qc/9807006)
- Martin, T.** General Relativity and Spatial Flows: I. Absolute Relativistic Dynamics (2000) [gr-qc/0006029](https://arxiv.org/abs/gr-qc/0006029)
- Hamilton A.J.S., Lisle, J.P.** The River Model of Black Holes, *Am. J. Phys.* **76**, 519 (2008). [10.1119/1.2830526](https://doi.org/10.1119/1.2830526)
- Tegmark, M.** *Seeing Black Holes*, dir. S.Cooter, BBC/Science Channel (2010)
- Lindner H.H.** Beyond Newton and Einstein to flowing space, *Phys. Essays* **25**(4), 500-509 (2012) [10.4006/0836-1398-25.4.500](https://doi.org/10.4006/0836-1398-25.4.500)
- Braeck, S., Grøn, Ø.** A river model of space. *Eur. Phys. J. Plus* **128**, 24 (2013). [10.1140/epjp/i2013-13024-2](https://doi.org/10.1140/epjp/i2013-13024-2)

} Best

GR is an **observer-contaminated corruption** of **Flowing Space**

Space Has Parts And Motion

A massless, frictionless **fluid**—the **medium** of gravity-inertia and electromagnetism

Discrete-quantized: Composed of contiguous **complex** “cells” at the Planck scale (?) ($10^{-33}cm$)

(Quantized **Space** is why mathematics works!)

Length: A number of **Spatial** cells

Time: **Cosmic evolution**—endless procession of **causes** and **effects**.

Clock: Any highly regular physical process is a **standard** for describing **Cosmic evolution**

Cellular Space Theory

DUAL Fluid Dynamic and Electromagnetic Nature:

As **Spatial** cells **flow** into and around **matter** they also conduct **electromagnetic** motions like an extremely rigid **elastic solid** (at **c**).

Subatomic particles are various **persistent** motions and alterations in/of **Spatial** cells.

Compressible: Equations of flow indicate that **Space** is **not** an **ideal fluid**; cells must **deform** or **disappear** in gravitational sink flow

We must **ascribe** to **Space** whatever qualities are needed to explain the phenomena.

Answer: Space is the Ground of all Being

All **Cosmic** phenomena result from **alterations** and/or **motions** of/within **Space**.
Less complex entities **combine** and **interact** in new ways, producing **more complex** entities:

Astrophysicochemical – **Space**, light, subatomic particles, atoms, chemicals, gravity (stars, planets, galaxies)

Biological – molecules, prokaryotes, eukaryotes, multicellular, histologic (RNA-DNA, bacteria, plants, animals)

Neuropsychological – sensation, neurons, information processing, brains, emotions, **consciousness** (higher animals)

Linguo-Mythic – **language** → toolmaking, culture, religion, civilization, technology (*Homo sapiens*)

Linguo-Philosophical – **disciplined** linguistic information processing (**7th cent. BC Ionia**—**Our Potential**)

Flowing Space Leads to Many Hypotheses

No Evidence that light, heat, motion, or electrons create **gravity** ($T_{\mu\nu}$ is **WRONG**)

Gravity probably Hadronic: Consumption of **Space** provides binding energy of the strong force.

Inertia caused by gravity: By matter's energetic sink-flow interaction with **Space**

Entrainment of Space by sinks **explains Mach's Principle**, defines **inertial frame** everywhere

And Many More!

The MESS: Physicists' Confusion

Indoctrinated at young age with textbook versions of Relativity and QM

TAUGHT LIES: Michelson-Morley experiments and SR **disproved** physical space
Relativity and QM are **physical theories**

Want to understand **Cosmos** but are **saddled** with **subjectivistic** models invented to
avoid all **Cosmic**-physical theory!

Forced to reintroduce **Cosmos** and physical **Space**—**surreptitiously** to maintain the **LIES**.

Result: **Nonsense, contradiction, complication, and unreality**

Objective Ether-Space Surrogates Everywhere!

Space-time: Their **stand-in** for physical inertial-EM **Space** and its effects

Objective/**Cosmic Frames**: inertial, “**absolute**”, co-moving, Sun-Star, etc.

Physical **Space**—without “-Time”: curved, inflating, expanding, etc.

Vacuum—light moves at c in *vacuo*, zero point energy of the vacuum

Fields: electromagnetic, gravitational, etc. (require a **medium**!)

Quantum loops, strings, fields, membranes, branes, foam

Higgs Field: to “give” particles “mass”

Condensates: e.g., Quark-antiquark (QQ^+)

Extra dimensions, “curled up” dimensions

As long as they
don't say “**ether**”
they are **OK**!

Surrogate Causes: Idealism and Atomism

Idealism: Lacking physical causes, the **observers' ideas** and **information** become **causes**:

Space-Time: “Fabric of the Cosmos” and **cause** of motion!

Time: **Magical thing/dimension** that can slow down, stop, and reverse

Energy: **Magical power** or **fluid** that flows from here to there and **does stuff**

Atomism: All physical phenomena **caused** by **particles interacting within a void**:

Standard Model: 12 **magical** self-existent particles and 4 **magical** forces (**Ad hoc**: 26 free parameters)

No physical mechanisms—“particle exchange” causes EM attraction and repulsion, inertia, gravity, etc.?

Hypothetical particles: **Never observed** and make **no physical sense**—photon, gluon, graviton, Higgs boson, inflaton, axion, virtual particles, WIMPs, etc.

Ultimate Irony: Physicists use **Machian QM** to **theorize** about **unseen Cosmic** particles and processes!



Atomism is like Creationist Biology

“Particle Zoo”—scores of **self-existent particles** interacting within a **void**
No possible explanations for their **origins** or **interactions**.

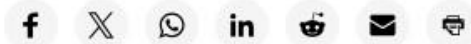
*Things don't Exist, only **Interactions** do.*
(with observers or “systems”)

Quantum weirdness isn't weird – if we accept objects don't exist

We can grasp the truth about the quantum world, says physicist **Carlo Rovelli** – as long as we abandon our most cherished assumption about what's real and what's not

By [Carlo Rovelli](#)

📅 10 March 2021



Rovelli trying to
rationalize
subjectivism

Idealism

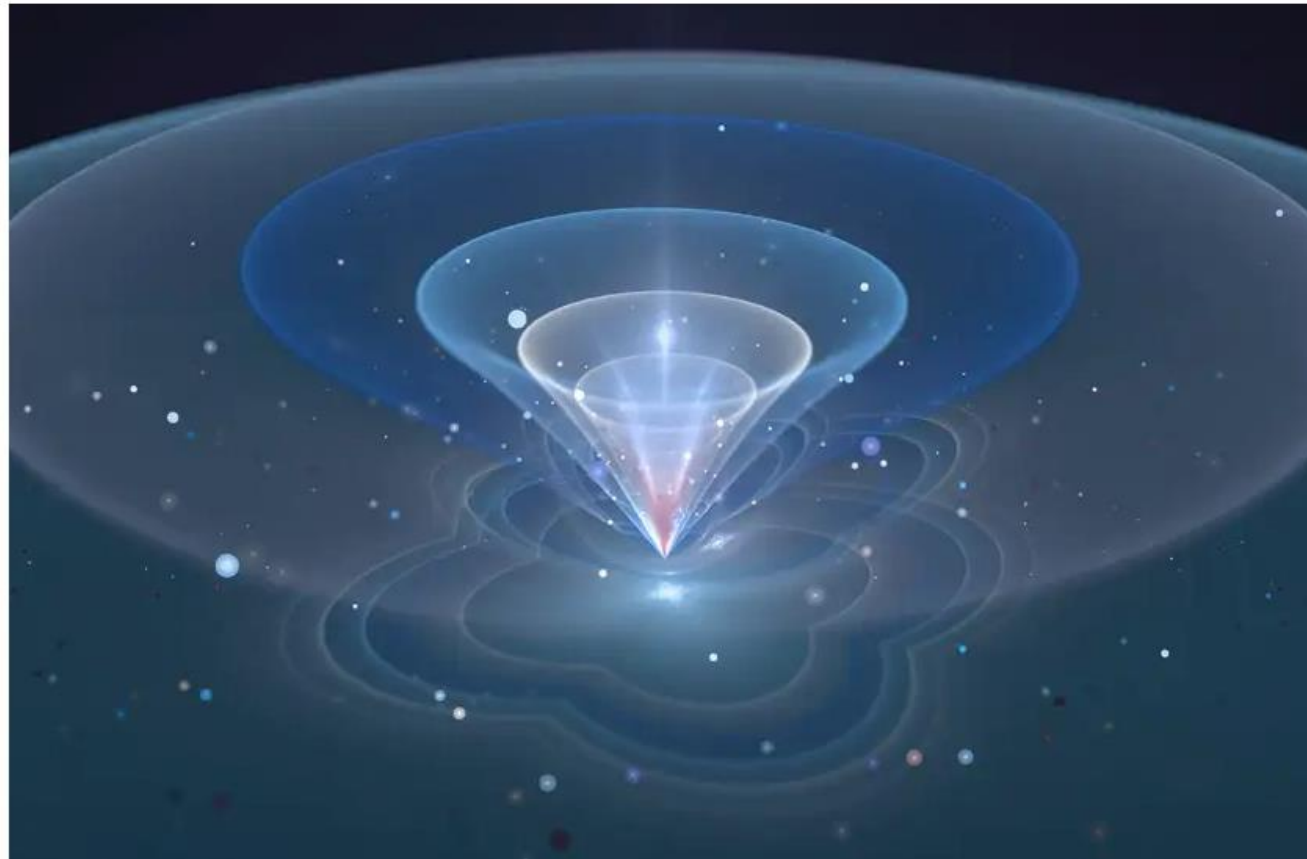
Physics

Space could emerge from time

An investigation of the changing behaviour of a single quantum bit through time has uncovered a tantalising similarity to the geometry of three-dimensional space

By [Karmela Padavic-Callaghan](#)

📅 8 April 2025



Returning to the Source: Berkeley's Matrix



The screenshot shows the Daily Mail website's Science & Tech section. The main headline reads: "Are we living in a simulation? Scientist claims we're simply characters in an advanced virtual world - and says he has an easy way to prove it". Below the headline is a bulleted list of two points: "Physics professor outlines the clues that suggest this world is not what it seems" and "He has also devised an experiment to test if we're living in a computer simulation". The article is attributed to Jonathan Chadwick for MailOnline, published on December 28, 2023. To the right of the main article, there is a search bar, links to download the iPhone and Android apps, and a section titled "Today's headlines" with three sub-headlines: "And you thought the standing-only seats were bizarre! Airbus is working on a DOUBLE-DECKER plane seat to...", "Scientists warn one of world's supervolcanoes is awakening: 'It will plunge the planet into chaos'", and "Joe Rogan left stunned by wild CIA plot that killed civilians and framed communists in propaganda campaign".

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Are we living in a simulation? Scientist claims we're simply characters in an advanced virtual world - and says he has an easy way to prove it

- Physics professor outlines the clues that suggest [this world is not what it seems](#)
- He has also devised an experiment to test if we're living in a computer simulation

By JONATHAN CHADWICK FOR MAILONLINE ✕

PUBLISHED: 08:35 EDT, 28 December 2023 | UPDATED: 11:54 EDT, 28 December 2023

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And you thought the standing-only seats were bizarre! Airbus is working on a DOUBLE-DECKER plane seat to...

Scientists warn one of world's supervolcanoes is awakening: 'It will plunge the planet into chaos'

Joe Rogan left stunned by wild CIA plot that killed civilians and framed communists in propaganda campaign

*If you feel like you're living in a computer simulation like **The Matrix**, you might actually be onto something, according to an associate professor in physics*

Without Physical Space Everything is Magic

Physical Phenomenon	Modern Physics	Space Theory
Space	Non-physical void	Inertial-EM medium
Light's fixed velocity independent of source velocity	Magic Observer-Law	Wave in EM Space
Atomic redshift with velocity (slowing atomic clocks)	Magic time dilation	Atom's Velocity in EM Space
Limiting velocity for matter	Magic Observer-Law	EM matter in EM Space
Gravity	Magic Observer-Law	Flow of inertial-EM Space
Inertia (acceleration/rotation)	Magic "Absolute" effects	Motions wrt Inertial Space
Quantized light-matter interactions	Magic Photons	Electrons' EM structure
Four Forces	Magic particle exchange	Motions in/of Space
Black hole singularity	Magic Math	Condensed matter
Dark Matter	Magic Invisible Particles	Interactions of Spatial flows
Dark Energy	Magic Unknown Energy	Production of Space?
Life, Consciousness	Magic from Magic	Hierarchical Evolution

SOLUTION: Philosophy and its Sciences

*Yet this very **philosophy** it is that ought to be esteemed the great **mother of the sciences**. For all arts and sciences, if torn from this root, though they may be polished and shaped and made fit for use, yet **they will hardly grow...***

*Let no man look for much **progress in the sciences**...unless natural philosophy be carried on and **applied** to particular **sciences**, and particular **sciences** be **carried back** again to natural **philosophy**.*

Francis Bacon *Novum Organum*, Aphorisms, 1xxix and 1xxx (1620)

We must: Always ask “**WHY**”: Seek the **cause**:

Recreate physics and philosophy with current knowledge:

Replace **observer** physics with **Space** physics

Replace Berkeleyan/Machian **Science** with **Philosophy**