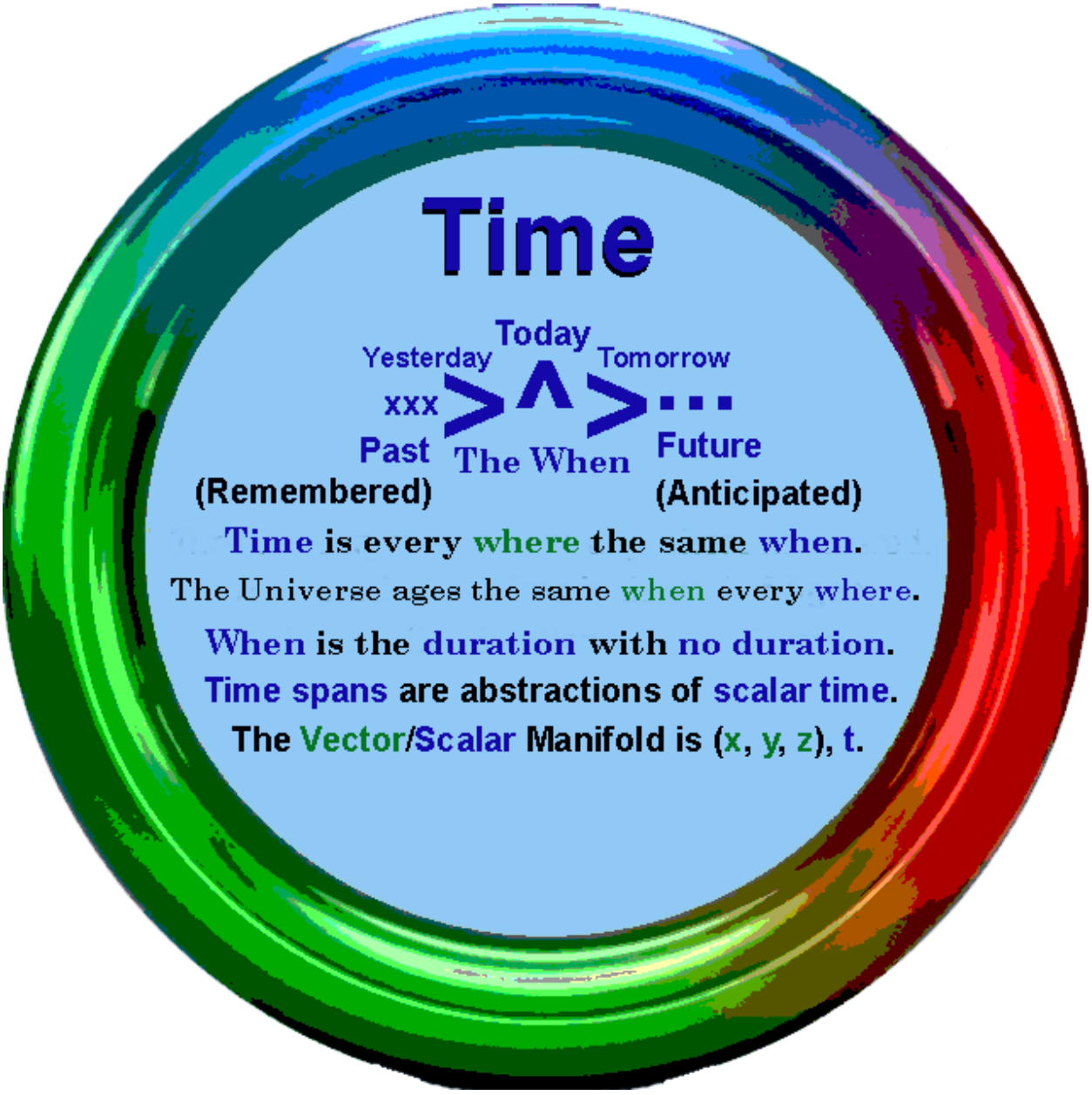
Universal Time – The Axiom of Time – The Set of Ages.

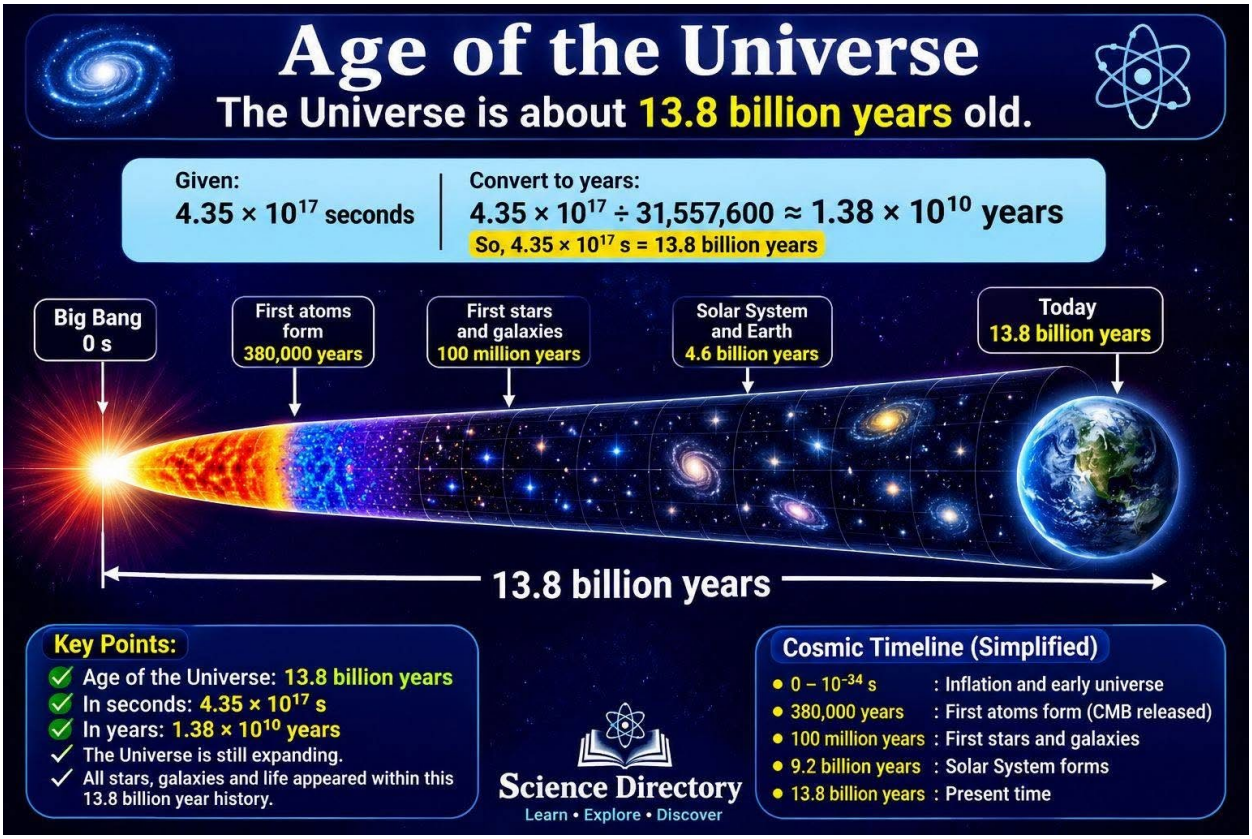
The Existence of The Universal Frame

By Craig M. Seavey
Author of The Modern Newtonian Framework

The Axiom of Time



The Corollary – The Set of Ages



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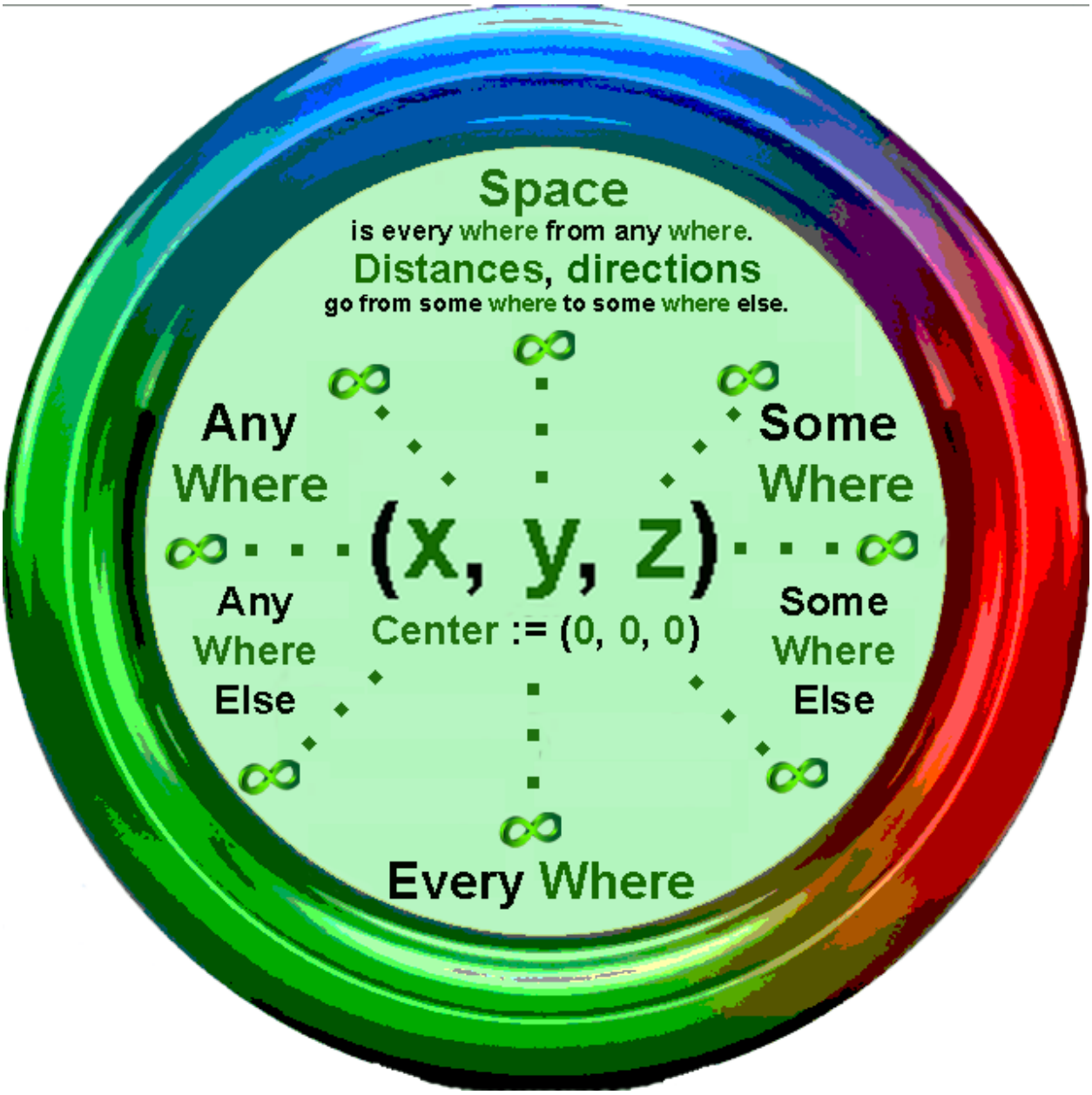
*The **Set of Ages** is an inclusive set of all empirical or abstract durations, from the smallest—the first **Tiny Time**—to the largest, **the Age of the Universe** itself. Every age is a duration that parallels the single scalar magnitude that is the age of The Universe. All ages relate as magnitudes that begin at the **Great Expansion**, grow in magnitude to the present, and continue into the future.*

The ***Axiom of Time -- Time is every where the same when.*** *For this to be properly true, time must be a magnitude. The axiom of time produces a magnitude that behaves in a single, immutable way for all things. This is self-evident: we experience time as a uniform increase in age. My age is a magnitude. Your age is a magnitude. The age of everything that ages is an accumulation of magnitude established by the magnitude that is the age of The Universe.*

The Axiom of Space



The ***Axiom of Space -- Space is every where from any where.*** *The axiom of space establishes that the Universe is every where. The age of The Universe is a scalar, every where at once—a universal magnitude from which all durations derive. All ages track along with this one grand magnitude.*

The Set of Ages manifests that magnitude properly true.

Relating time to space: **Euclidian Space -- Universal Time**

The **when** is every **where** at once. The age of The Universe is **when** to **when**, one **when** to the next, a one-directional accumulated duration. The first **when** begins the **Great Expansion.** The current age of The Universe is from then to today -- recorded history. Tomorrow follows today – the future anticipated.

Durations go from some **when** to a later **when:**

Timespans begin at a particular **when**, end at some later **when**. Timespans are always abstractions — never directly physical. Timespans exist as experience: a second, a minute, an hour, a day, a lifetime. The Universe experiences years in that same sense. 13. 8 billion years currently. Timespans are measured from **when** to **when**, yes, but lived through as well.

- Timespans are measured durations as a sequence of continuous when.
- Time flows now to future wherever and whenever experienced.
- Time is both measured and experienced. These are separate things.
- **The experience of time is always here and now, however measured.**
- Time is *lived through experience. Timespans are kept as abstractions*.

Concerning Boundary: *The Set of Ages.* *(the set of t).*

The Set of Ages is the cardinality of Tiny Time durations since the first such t.

Let T_when be equal to N multiples of the Tiny Time:

***Then T is* an inclusive, well-ordered set:** $T = \{ t_1, t_2, t_3, \ldots , t\_N \}$

The largest duration in *The Set of Ages* is *The Age of The Universe.*

The age of the Universe is a simple scalar. Tiny Time is the smallest unit-measure.

The Universe is as old as the 1st Tiny Time to today's current when.

To Prove: The Universal Frame exists.

Givens

- **Given 1: The Universe is a system that contains many subsystems.**
- **Given 2: The Universe contains Slow Guy (SG - our frame), Fast Guy (FG - moving frame), Earth, Mars, Andromeda, Voyager I and II, a Tesla car in orbit around the Sun. All these are example subsystems.**
- **Given 3: FG departs January 1, 2026 ; returns January 1, 2028.**
- **Given 4: SG remains on Earth between those same dates.**
- **Given 5: We use "year" as the scalar unit-measure for durations.**

Reason 1 — The Universe has one invariant duration

- **Statement: Between January 1, 2026 and January 1, 2028, the Universe itself undergoes one and only one duration.**
- **Justification: There is a single cosmic interval between those two events; there is no "second Universe" with a different interval.**
- **Conclusion: The Universe aged by 2 years; the system and all its subsystems have aged by 2 years.**

Reason 2 — All subsystems live inside the system that is The Universe.

- **Statement: FG, SG, Earth, Mars, Andromeda, Voyager I, Voyager II, the Tesla car all exist *inside* the same Universe during that interval.**
- **Justification: A subsystem cannot step outside the system to accumulate a different duration.**
- **Conclusion: Every subsystem of The Universe must share the same cosmic interval the Universe experienced.**

So since the Universe has aged by 2 years, then every subsystem has aged by that same 2-year cosmic interval.

Reason 3 — Local durations are unit-labels on the same interval

- **Statement: "Tiny Time", "Second", "Minute", "Hour", "Day", "Year". "Tok" are scalar unit-measures applied to the age of The Universe. Toks are Martian years, approximately 2 Earth years.**
- **Examples:**
  - **Earth: The Universe is 13.8 billion years old.**
  - **Mars: The Universe is 6.9 billion toks old.**
- **Justification: Changing units (years vs toks) does not change the underlying duration; it only rescales it.**
- **Conclusion: All local time labels are mappings onto the same cosmic duration.**

Thus, SG's & FG's "2 years", Earth's "2 years", Mars's "1 tok", are all different labels for the same 2-year cosmic interval.

Reason 4 — Physical clocks measure time subject to relative distortion

- **Statement: Physical clocks in any subsystem are local devices subject to motion and acceleration. The age of The Universe is direct experience. The Universe has no physical clock.**
- **Justification:**
  - **Clocks can run fast or slow.**
  - **Clocks can disagree with each other.**
  - **Clocks can be corrected or recalibrated.**
- **Key Point: None of that changes the Universe's duration.**
- **Conclusion: Clocks are operational instruments, not the definition of time; they do not determine cosmic duration.**

Therefore, any argument that one subsystem is older or younger than another subsystem is about clock behavior, not about system behavior. All subsystems of The Universe age in common with The Universe.

Reason 5 — The Set of Ages contains only meaningful durations

- **Tiny_Time — primitive unit**
- **Great_Expansion — start of meaningful time**
- **Today – end of meaningful time (the current when)**
- **Set_of_Ages — bounded temporal manifold of meaningful time**

Definition

Meaningful duration begins at the Great Expansion. Tiny Time exists before the Great Expansion, but meaningful time does not.

***Let the current age of The Universe be N Tiny Times*.**
Then the set is: $T = \{ t_1, t_2, t_3, \ldots , t\_N \}$

- **bounded below by the Tiny Time *that begins* the Great Expansion**
- **bounded above by the current cardinal Tiny-Time (the current when)**
- **inclusive and well-ordered**

Statement: The Set of Ages is the set of all Tiny Times from the start of The Great Expansion to today (the current *when*).

- **Elements:**
  - **The chosen subsystems all have 2-year intervals**
  - **SG, FG, Earth, Mars, Andromeda, the car in orbit, etc.**

Justification: Each of these is just "this subsystem's share of the Universe's 2-year interval."

Conclusion: All subsystem durations are elements of one common set—the Set of Ages.

This set is global and inclusive; it is the same for all subsystems.

Reason 6 — The Universal Frame is ontological, not geometric

- **Statement: The Universal Frame is not:**
  - **a coordinate grid**
  - **a Minkowski diagram**
  - **a privileged observer**
  - **a particular clock**
- **Definition: The Universal Frame is the Universe's own duration—the Set of Ages that every subsystem must share.**
- **Justification:**
  - **It does not pick a "special observer."**
  - **It does not assign "true time" to SG and "less time" to FG.**
  - **It simply states: *if the Universe aged 2 years, everything inside it aged 2 years.***
- **Conclusion: This frame exists as an ontological baseline for durations, without violating No Privileged Observer.**

Therefore, Proven

The Universal Frame exists. It is the Set of Ages—the Universe's own duration. Between January 1, 2026 and January 1, 2028, the Universe aged by 2 years. Therefore FG, SG, Andromeda, the satellites, the car, and every subsystem of the system aged by 2 years. Clocks are local distortions and do not define cosmic time. All durations map onto the Universal Frame.

Proved.