Answers 4 Seekers, Topic #11A

TOPIC: Age of the Universe Models

(semi-technical)

(Note: Starlight Time-Travel Models will be the discussion of our next session, Session#11B)

1) Starting With a Solid Foundation
2) Types & Hierarchy of Evidence
3) Summaries of the main "Age of the Universe" Models
4) Detailed Summary of Big-Bang Universe Model
5) What is the Multi-Verse Concept?
6) Detailed Summary of Young Universe Model
7) Ending Thoughts
8) Reading Resources
9) Video Resource: https://www.youtube.com/watch?v=SgSITin3obc

1) Starting With a Solid Foundation For Exploring

a) Putting the Universe & "Cosmology" Into Perspective:

i. "Cosmology" defined: a branch of metaphysics that deals with the nature [and origin and age] of the universe. [Sources: Cosmology Websters, Cosmogony Websters]

ii. "Cosmology is not even astrophysics: all the principal assumptions in this field are unverified (or unverifiable) in the laboratory …" *Astrophysicist Richard Lieu (*0705.2462v1.pdf (arxiv.org)

iii. "Cosmologists only know how to use 'unknowns' to explain 'unknowns' (and hence are not really astrophysicists)" *Astrophysicist Richard Lieu (*0705.2462v1.pdf (arxiv.org)

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iv. "Hence the promise of using the Universe as a laboratory from which new incorruptible physical laws may be established without the support of laboratory experiments is preposterous …."
*Astrophysicist Richard Lieu (*0705.2462v1.pdf (arxiv.org)

v. "… astronomical observations can never by themselves be used to prove 'beyond reasonable doubt' a physical theory. This is because we live in only one Universe—the indispensable 'control experiment' is not available.
*Astrophysicist Richard Lieu (*0705.2462v1.pdf (arxiv.org)

vi. "… I suspect the assumption of uniformity of the universe [an assumption in the Big Bang] reflects a prejudiced born of a sequence of overthrows of geocentric ideas [ie, earth as the center] …. It would be embarrassing to find … that our place in the universe is extraordinary …. To avoid this embarrassment, we cling to the hypothesis of uniformity."
Physicist Richard Feynman (feynman-lectures-on-gravitation, 1999, pg.166)

b) All Four main "Origin of the Universe" Models Require at least Three Super-Natural Miracles:

Age Models	These Model Requires At Least Two Miracles to operate:
The Eternal Universe	**1.** Since the Universe is viewed as eternal, it would have run out of all useful order and energy based on the "Law of Entropy, and so life could NOT exist now. *Miracle: Entropy overruled*. **2.** Life from non-life - *Miracle* **3.** Mankind possesses (and demands) free-will. There is no place in a purely materialistic universe for chemical reactions to possess the attribute of "free-will." *Miracle: Materialist determinism and probabilities overruled*.
The Big-Bang Universe	**1.** Since this model says the Universe (Time, Space, Matter) all popped into existence out of "nothing," and so violates the "Law of Conservation of Energy/Matter." *Miracle: Law of Conservation of Energy overruled.* *[also see, the problems with the proposal of "quantum fluctuations" in section 4.b.8)* **2.** Life from non-life - *Miracle* **3.** Mankind possesses (and demands) free-will. There is no place in a purely materialistic universe for chemical reactions to possess the attribute of "free-will." *Miracle: Materialist determinism and probabilities overruled*.
Day-Age Creation (old universe)	**1.** An All-powerful, eternal Creator created the universe out of nothing and mankind directly by His desire and word. (Revelation 4:11, Hebrews 11:3). *This Model overrules the natural "Law of Conservation of Energy."* **2.** Life from non-life - *Miracle* **3.** Mankind was created in God's image, possessing a spirit, soul, and body (2 Thessalonians 5-23), and free-will (Genesis 2:16,17). *Miracle: Special creations overrules the domain of purely materialistic matter and forces.*
The Created and Young Universe	**1.** An All-powerful, eternal Creator created the universe out of nothing and mankind directly by His desire and word. (Revelation 4:11, Hebrews 11:3). *This Model overrules the natural "Law of Conservation of Energy."* **2.** Life from non-life - *Miracle*

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	3. Mankind was created in God's image, possessing a spirit, soul, and body (2 Thessalonians 5-23), and free-will (Genesis 2:16,17). *Miracle: Special creations overrules the domain of purely materialistic matter and forces.*

The Point: Regardless of the Model we choose for the "Origin of the Universe," at least three super-natural miracles are required. The Eternal Universe and the Big-Bang Universe's require miracles but have no Miracle Worker.

c) The Two Worldviews and how they affect our Cosmology:

a. A Materialistic-Only Model: Space, Time, Matter, Energy, and the laws of physics are all that ever existed or could ever exist. No super-natural element to reality is allowed.

   i. This view rejects any super-natural (non-purely natural) element in reality; when a violation of the laws of physics occurs, it must be referred to some yet unknown property of physics. **This Model allows Mankind to be only an accidental & temporal chemical machine, destined extinction**.

b. A Composite Model: Both a super-natural element and a natural element coexist in reality.

   i. In this view, the physical realm (nature) has its source from a super-natural origin. "Super-natural" means operating above and beyond laws of nature. **This Model shows Mankind as being planned, created in the image of God, with having eternal future and purpose.**

d) Mankind's & God's Ability & Limits:

   i. Mankind is wonderful, but finite in intelligence and temporal in lifespan.

   ii. God is Eternal, All-Knowing, and All-Powerful

      1. While God encourages mankind to explore His creation (Proverbs 25:2), He also reminds us:

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a. God's ways are above our ways (Isaiah 55:9),
b. God cannot lie (Hebrews 6:18),
c. God's Word is the ultimate, imperishable truth (John 17:17; Isaiah 40:8), and
d. Jesus admonishes us to rely upon His word and build upon it (Matthew 7:24-27) for a life build on truth (John 14:6)

iii. In trying to predict the age of a past unobserved event (e.g., age of the universe), if based on only using present physical phenomena, both the creationist-view and the materialistic-view would need to rely upon assumptions.

<u>Example</u> of an Age-Rate problem (using the assumption of uniformitarian rates):

- Today Randy is 20-years old and is 69" tall.
- From actual measurements, we know that Randy grew exactly 1" each year from age-10 (59") to age-20 (69").
- Therefore, based on this growth rate of exactly 1"/year and a uniformitarian assumption,
- When Randy' was born (age-0), he would have had the height of 49" (4-feet, 1-inch).

Is this case, is a "uniformitarian expectation" reasonable for observable life? [ ]Yes [ ]No

iv. To have a satisfactory "Origin & Age" of the Universe Model, the model must be able to adequately support the aspects demanded by humanity:

1. the existence of the physical realm,

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2. the existence of true free-will, and
3. the existence of the mental/spirit realm.

e) The God of the Bible describes one of His attributes as being "almighty" in power:

a. Revelation 1:8 "I am the Alpha and the Omega," says the Lord God, who is and was and is to come—**the Almighty."** (Greek: Παντοκράτωρ, Pantokratōr)

b. "Παντο-κράτωρ" (Greek): Panto=All, Kratōr = power/might; therefore, PantoKratōr = "all-power." ["all" includes "infinite"]

i. The Point: If someone was powerful enough to create the universe in 13.79 Billion years, but truly had all-power (i.e., infinite-power), if they wanted to, they could have also easily created the universe in 6 seconds.

ii. **God states that at the right time, He will again have no problem creating a new Heaven and new Earth (making the Universe new), as the scripture says:**

> *"Since everything will be destroyed in this way, what kind of people ought you to be? You ought to live holy and godly lives as you look forward to the day of God and speed its coming. That day will bring about the destruction of the heavens by fire, and the elements will melt in the heat. But in keeping with His promise we are looking forward to a new heaven and a new earth, where righteousness dwells."*
>
> *(2 Peter 3:11-13)*

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f) The Two Models Have Very Conflicting Chronologies of Key Events:

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Note: The Biblical sequence vs. Big-Bang's naturalistic sequence

g) Jesus gives us instructions on how to know and not limit God:

a. "Jesus replied, 'You are in error because you do not know the Scriptures or the power of God (Matthew 22:29)."

Therefore, we should follow Jesus' recommendation:

i. Know the scriptures.
ii. Don't limit God's power.

h) Does the Universe have a Manufacturing Date-Plate:

i. It would have been nice if the universe was like an automobile and had a manufacturing date-plate placed on it (figure 1), but it doesn't, so aside from taking the reliable account from a then-present eye-witness (God), we are limited to review the available natural evidences and come to our own best conclusions amongst conflicting data.

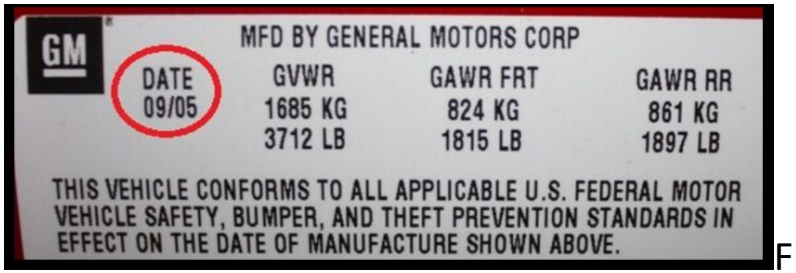

Figure-1

ii. CAUTIONARY NOTE: All humans hold "a worldview" and so we tend to "accept" something as being 'true' even on weaker evidence if it fits into our worldview, but tend

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to “reject” something as being “true," if it conflicts with our worldview, even if it seems to stand on stronger evidence. (*Consider reviewing Session#2 on “worldviews and presuppositions*)

2) Types and Hierarchy of Evidence

a. Four Sources of Evidence for Events/Phenomena:

Evidence Level of Certitude Strength	Evidence Types	Brief Description of Evidence type	Evidence type Example:
Highest	Present Eyewitness	A Living, Present, Capable and Reliable, Eyewitness	A living person who saw and recorded one of the planes crashing into the NYC World Trade Towers on 9-11-2001.
Medium-High	Past Eyewitness	A Record from the Past, by a Capable and Reliable Eyewitness	The signed document called, ***“The Unanimous Declaration of the Thirteen United States of America”*** signed and dated on *7/4/1776.* (note: some absent members signed later).
Medium-Low	Historical Science - Present	Present Observations with assumptions about the current and past rates and their conditions.	“For human or animal remains … almost all of the **carbon 14** in a dead organism has already decayed, so researchers must turn to longer-lived elements.” https://www.scientificamerican.com/article/how-do-scientists-determine-the-ages-of-human-ancestors-fossilized-dinosaurs-and-other-organisms
Lowest	Historical Science - Past	Past recorded observations with assumptions about the current and past rates and their conditions.	The phlogiston theory (1667ad to 1794ad): is a now discredited scientific theory that postulated the existence of a fire-like element called phlogiston contained within combustible bodies and released during combustion; is now replaced by the “Oxygen Theory.”

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b. Evidence Hierarchy

(Review "evidence" information from Session#2)

Evidence Priority Levels	Evidence Type & Brief Description
Level 10 (Strongest)	**Origin Observed:** Something originally observed, measurable, repeatable today, and recorded by a credible and capable eye-witness or observer.
Level 9	**Origin Observed:** Something originally observed, repeatable today, and recorded by a credible and capable eye-witness or observer.
Level 8	**Origin Observed** - Something originally observed and recorded by a credible and capable eye-witness or observer.
Level 7	**Origin Not-Observed, But Historic** - Something observed in the past, measured, and recorded by a credible and capable eye-witness and accepted as factual by their contemporary community.
Level 6	**Origin Not-Observed, But Historic** - Something observed in the past, and recorded by a credible and capable eye-witness and accepted as factual by their contemporary community.
Level 5	**Origin Not-Observed, But Historic** - Something observed and historically recorded by a credible and capable eye-witness.
Level 4	**Origin Not-Observed, Based on Calculation Only:** **1)** Based on a present observed phenomenon that is measurable and repeatable, and believed to be understood. **2)** Also, assumptions are required a) Phenomenon interpretation is correct, b) present rate of phenomenon is identifiable and repeatable, c) the rate process has remained uniformitarian throughout its existence, d) the system was and remained an absolutely closed-system, and e) No supernatural involvement. **3)** Additionally, should agree with other competing dating and history evidence methods.
Level 3	**Origin Not-Observed, Based on Calculation Only:** **1)** Based on a present observed phenomenon that is measurable and repeatable, and believed to be understood. **2)** Also, assumptions are required a) Phenomenon interpretation is correct, b) present rate of phenomenon is identifiable and repeatable, c) the rate process has remained uniformitarian throughout its existence, d) the system was and remained an absolutely closed-system, and e) No supernatural involvement.
Level 2	**Origin Not-Observed, Based on Calculation Only:** 1) Based on a present observed phenomenon that is measurable and repeatable, and believed to be understood.

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Level-1 (weakest)	**Origin Not-Observed, No Phenomenon Calculation:** Simply proposed by an a-priori commitment to a philosophic worldview.

a. Reminder: Naturalistically Calculating the Age of a past Historic, Unobserved Event, Always Requires at least 4 Assumptions:

#	Required Assumptions	Is Absolute Certainty Possible?	Example Question
1	The phenomena and its process rate are presently completely and accurately understood?	**No**	Is it possible to know that "redshifted" starlight is only due to the cosmic expansion of the fabric of space? Even in 1947, Edwin Hubble was still unsure that the H_0 Constant was actually (or purely) due to an expansion of space.
2	The process rate of phenomena has been uniform and fixed throughout all its history?	**No**	With the short period of time of the use of H_0 (Hubble Constant) and the understanding of the speed of light, is it possible to state that neither of these rates ever changed throughout time?
3	All other phenomenon and processes that could affect this phenomenon's rate have been identified, understood, and eliminated?	**No**	Is it possible to know that we have identified all the phenomena and forces that affect our understanding of H_0, the speed of light, and the past age of the universe?
4	The universe has always operated in a completely closed-system?	**No**	Is it possible to know that throughout history has the universe always been a closed-system (that is, nothing has ever left the universe or acted upon the universe from the outside?)

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5	No super-natural (that is, beyond physics) powers or forces were ever employed or involved?	**No**	Can we prove that supernatural forces were never involved?

3) Overview of 4 main types of "Age of the Universe" Models:

b) Summary of the Main "Age of the Universe" Models:

#	Age of Universe Model	Model's Age of Universe Estimate (yrs)	Main Basis of Model and Calculation	Main Problems with Model
1	**Eternal Universe** (Steady State, Plasma, Cyclical)	**Eternal**	Commitment to Pure Naturalism and the Law of Conservation of Energy/Matter. Since "something" can never come out of "nothing" based on the Laws of Physics, and since the Universe is here, it must be eternal.	1. Model violates the Law of Entropy; since if universe was eternal, based on laws of physics, it would have completely run out of all useful order and energy by now. 2. Requires an unsupported pre-commitment to strict naturalism, based only on personal philosophy, and not observation, evidence, or experience. 3. Has NO Original Observer at the beginning to confirm or deny this model.
2	**Big-Bang Universe**	**13.79 Billion Years** (but can range from 2 to 27 Bil.-Yrs.)	*Use of Hubble Constant (H_0) identified in 1929, which is viewed to imply an expansion rate of space due to the redshifted light. *Bolstered by belief that the levels of (Cosmic Microwave Background Radiation (CMBR) identified in 1965 were as predicted by this model.	1. Model has no Original Observer at the beginning. 2. Model violates Law of Conservation. 3. Even in 1947, Edwin Hubble was still unsure that the H_0 Constant was actually (or purely) due to an expansion of space. 4. Conflicts in H_0 values and methods. 5. CMBR created "more problems" 6. This Model has many other problems and challenges: **SEE Section #4 for a Detailed Overview**
3	**Day-Age Universe** (6 – undefined eons)	**Undefined time**, Viewed as Eons.	Flexible interpretation of the word "day" in Genesis, which tries to align with the main secular view of the ages of the universe. *(Please Note: 1) the Gap theory, 2) Framework Hypothesis, 3) Progressive Creation, and 4) Theistic Evolution appear to be similar to either the "Day-Age" or "Big-Bang" models).*	1. Uses a non-contextual interpretation of the word "day" (Hebrew "Yom," which in Day-Age is viewed as an "eon." In context with the phrase "evening and morning, and the "ordinal day numbers," supports each day as one revolution of the Earth (not an undefined eon). (Ref. Exodus 20:9,11)
4	**Young Universe**	**< 10,000 years**	1. Straight forward interpretation of the word "day" in Genesis. 2. Complete alignment with start and duration of recorded history.	1. Does clash with the assumptions of other age models, but does correctly fit within the straight froward reading of Genesis 1 and within the duration of actual known history.

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		(in Session #13 we will explore the models and evidences for age of the earth	3. Certain stellar phenomena best explained by a young universe (not an old universe) 4. Recognition that all models are based on assumptions.	2. Model may challenge people, if they are unfamiliar with the Scripture or the power of the Almighty God. (Matthew 22:29; Rev. 1:8) **SEE Section #6 for a Detailed Overview**

4) Detailed Overview of The Big-Bang Model:

#	Topic Area	Details
1	**Projected age of the Universe**	13.77 Billion years +/- 40 million years **(See section below how that age has changed over time and continues to change)**
2	**Basis for concept and the Age Calculation**	Hubble Constant (H_0) -- Believed to be a value of light's redshift due to the expansion of space As of 1947, Edwin Hubble was not fully confident the light's redshift was due to space expansion. **T = D/V T = 1/H T = 1/H*D/V** T = Time H=Hubble Constant D=Distance V= Radial Velocity H = Hubble Constant of proportionality Sometimes an arbitrary use of 2/3 the value of H is used to compensate for the thought that gravity would reduced the H_0 over time (it is interesting to note that the current belief is that the universe is increasing in acceleration, not decreasing).
3	**Required Assumptions used in model**	1. No super-natural involvement in creation, 2. Light's Redshift is solely due the expansion of space, 3. The Hubble Constant is accurate, 4. Hubble constant remained constant throughout history 5. No other unknow phenomena are at play.
4	**Scientific support to this model**	1. The redshift in star-light can be interpreted as receding motion (similar to Doppler effect). 2. The CMBR (Cosmic Microwave Background Radiation) map of 1965 helped to support a Big-Bang theory's prediction of the CMBR of 2.7K (but a3K was already predicted before Big-Bang Theory. 3. Hubble's redshift H_0 calibrated to other space distance approaches: • Trigonometric parallax: ESA says Gaia says parallax max. range is 30,000 light-years (direct calculation) Cepheid variables (max. range 50 million light-years (indirect calculation)
5	**Scientific Problems and Challenges**	**Too numerous to describe here, please see detailed section below.** Additionally, 405 secular scientists and engineers **reject this model.**

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		NOTE: LIGHT-TRAVEL Models will be reviewed in upcoming Session #12.

a. **An example of how H_0 is use is used based on assumptions to project the Age of the Universe:**

$$1/H = d / v \qquad (2)$$

$$\frac{\text{seconds x megaparsecs}}{\text{kilometres}}$$

With these units, inverse H must be multiplied by 9.64 x 10^{11} to give an age in years. Thus if $H = 50$,

Universe age = 1/50 x 9.64 x 10^{11} years
= 19.3 billion years

Such values are handled loosely by astronomers because of their suspicion that H has decreased with time; the universe must therefore be somewhat younger. It is common practice to quote an actual age value of about 2/3 of the calculated result, in this case 13 billion years.

a. See a simple video of basic calculation using H_0.

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b. Even Edwin Hubble in 1947 was not convinced that the note "redshift" in starlight was actually explaining an expansion rate universe.
https://iopscience.iop.org/article/10.1086/125931/pdf

b. The Big-Bang Model has its own Challenges:

i. **There are conflicting concurrent values of the "Hubble Constant (H_0)":**

1. **H_0 values have changed, even in our current time period.**
   a. Changes in H_0 values are said to be due to improvements in the data collection and calculation, yet for something that is to be precise, there are many disparate values.
   b. Additionally, as late as 1947, Edwin Hubble himself still had concerns that the redshift in light might be due to other phenomena, and not the expansion of space.

   c. **Chronology of the "Hubble Constant (H_0)" value conflicts and their predicted Age of the Universe:** (https://dl0.creation.com/articles/p028/c02811/j09_1_7-11.pdf

      i. 1929, H_0=320, AGE= 2.00 Billion Years (Edwin Hubble)
      ii. 1973, H_0=75, AGE= 9.00 Billion Years
      iii. 1992, H_0=36 , AGE= 18.00 Billion Years
      iv. 1993, H_0=26, AGE= 25.00 Billion Years
      v. 1994, H_0=54, AGE= 12.00 Billion Years
      vi. 2020, H_0=75.1, AGE= 12.60 Billion Years (Univ of Oregon)
      https://around.uoregon.edu/content/uo-physicist-tweaks-age-universe-new-approach
      vii. 2021, H_0=67.6, AGE= 13.77 Billion Years +/- 40 Million (Cornell)
      https://as.cornell.edu/news/new-view-natures-oldest-light-adds-twist-debate-over-universes-age
      viii. 2023, H_0=N/A AGE: 26.70 Billion Years (Univ. of Ottawa)
      https://www.uottawa.ca/research-innovation/news-all/reinventing-cosmology-uottawa-research-puts-age-universe-267-137-billion-years

2. **The Flatness Problem**

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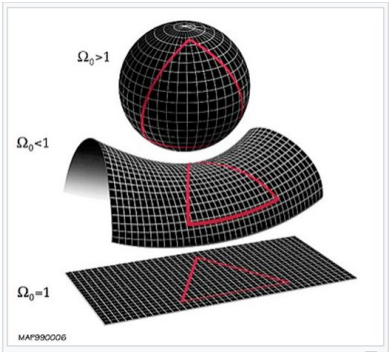
a. **The Flatness Problem:** All we ever measure in the universe is Euclidean space, which is space is flat, not curved. This depends on the mass density represented by Ω (capital omega). (A relationship between force of gravity of matter and the force of expansion of space)

i. **Ω > 1** means that the universe has enough mass to cause an eventual collapse, and it would have elliptical geometry or positively curved space (like a sphere).

ii. **Ω < 1** means it would expand forever, which entails negative curvature or hyperbolic geometry (like a saddle).

iii. However, the observations show flatness, which means **Ω = 1** (the density is minutely below the threshold required for collapse)**.** This accuracy (1 part in 10^{60}) is highly improbable if done by random, undirected, unnecessary forces.



The local geometry of the universe is determined by whether the density parameter Ω is greater than, less than, or equal to 1. From top to bottom: a spherical universe with $\Omega > 1$, a hyperbolic universe with $\Omega < 1$, and a flat universe with $\Omega = 1$. These depictions of two-dimensional surfaces are merely easily visualizable analogs to the 3-dimensional structure of (local) space.

b. A flat universe today implies that the universe must have also been flat shortly after the supposed Big Bang. Within the Big Bang model, this could not have happened unless the density of the very early universe was fine-tuned to a special value. This is a cosmological fine-tuning problem, where the force of the expansion matched the force of gravity to one part in 10^{60}. The slightest imbalance between those two forces would make life impossible to exist.

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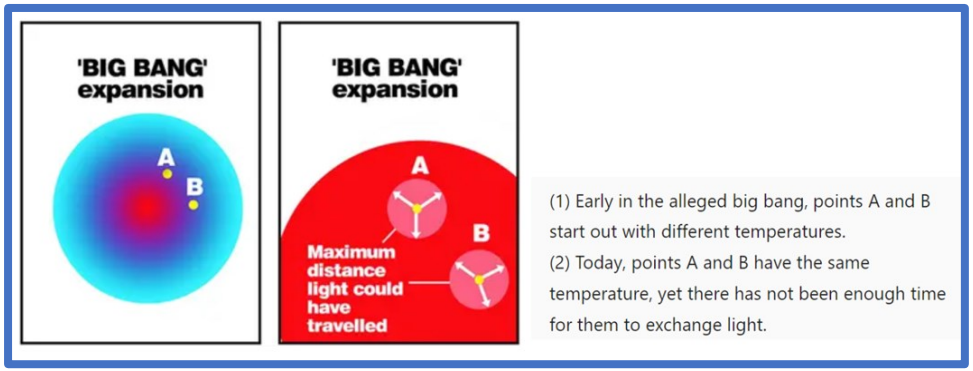
c. Naturally, Materialists do not like the idea that fine-tuning might have occurred, because that idea strongly suggests a Designer-Creator.

3. The Horizon (Temperature Smoothness) problem:

a. Light has not had enough time since the Big-Bang to travel between what should be causally coherent regions of the visible universe, which means they are not causally connected (i.e. beyond the 'horizon'). All light carries radiant heat energy. So, light from diametrically opposite sides of the Universe would not have had enough time to reach one another and so reach equilibrium. Then why is it generally isotropic (the same) in every direction we look?

b. This is particularly true for the temperature of Cosmic Microwave Background Radiation (CMBR) where we see the same thing—the Universe is isotropic, the same temperature (2.726 K) in all directions to within 1 part in 100,000. This is called the smoothness problem, and it is even more incredible, because as the Universe expanded, the isotropy (sameness) supposedly lessened, starting at the level of 1 part in 10^{40}.

c. The figure below shows that light from different points in our huge universe could not have reached one another, even when given the time of 14 billion years (please see the arrows within the circles:



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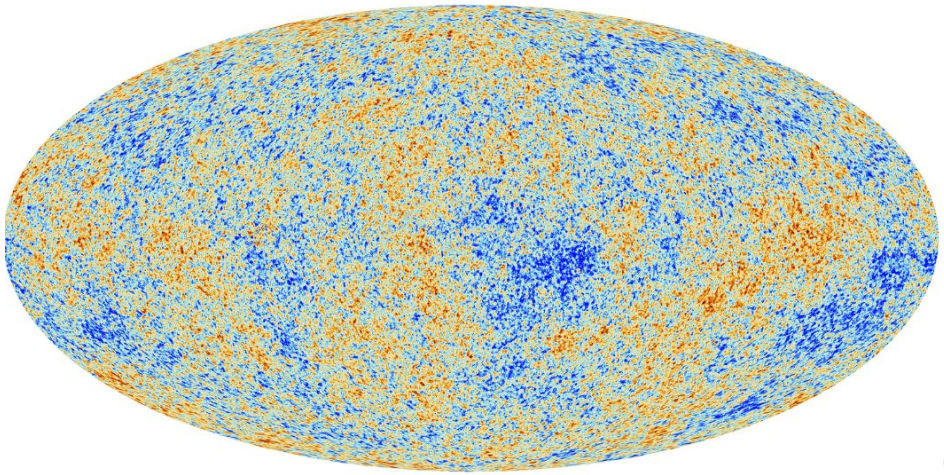
4. The Cosmic Microwave Background Radiation (CMBR) Problem

a. While the cosmic microwave background radiation was considered to be a point of confirmation to the Big Bang model in 1965, the CMBR's super smoothness created problems:

i. The smoothness of the CMBR temperature throughout the universe, even when proposing 14 billion years, was not enough time for light from one side of the universe to touch the other side, creating the Horizon Problem (as already discussed above).

ii. The Big Bang Model projected the smoothness of the CMBR to be about 1 part in 10000, so those anisotropic (un-sameness) areas of temperature could act at energy seed beds to birth new galaxies, but the actual smoothness was found to be 1 part in 100,000, one order of magnitude greater than expected. These minute and dubious variations were only of the order of 1 in 10^5, actually ≤70 μK. This misses the required temperature disparities proposed by the Big-Bang.



CMBR MAP (Planck)

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1. **The mapped CMBR was too smooth for stars and galaxies to form.** To explain the structure that we see in the universe today (galaxies and clumps of galaxies), from the beginning of the big bang there must have been regions in the universe where the density was slightly greater than in other regions. The regions of greater density would have had greater than average gravity. The regions of greater gravity would have acted as seeds to attract matter to form the structure that we see today. Otherwise, if the universe were perfectly smooth, then galaxies, stars, and planets would not have formed.

2. These small variations in density in the early universe ought to show up as slight variations in temperature in the CMB. That is, there ought to be slightly warmer and cooler temperatures in different directions in space. Cosmologists determined that these fluctuations in temperature would be on the order of one part in 10,000. NASA designed the COBE (Cosmic Background Explorer) satellite to look for these temperature fluctuations. Launched in 1989, COBE had a two-year mission during which it mapped the entire sky in the portion of the spectrum where the CMB is strongest. The two years of data collection revealed a perfectly smooth CMB, in direct conflict with the model predictions.

3. After some very sophisticated statistical analysis of the COBE data, a team of scientists found evidence of slight variations in the CMB in the COBE data, but on the order of about one part in 100,000 rather than the predicted one part in 10,000. But how can that be, when the measured temperature fluctuations were only 1/10 those predicted by the model? There indeed are temperature fluctuations, but they are far from the predicted level. Theorists altered the Big Bang model to fit the data.

4. the **Axis of Evil** and the **CMB Cold Spot:** The Wilkinson Microwave Anisotropy Probe (WMAP) spacecraft measured the CMB with great precision during its

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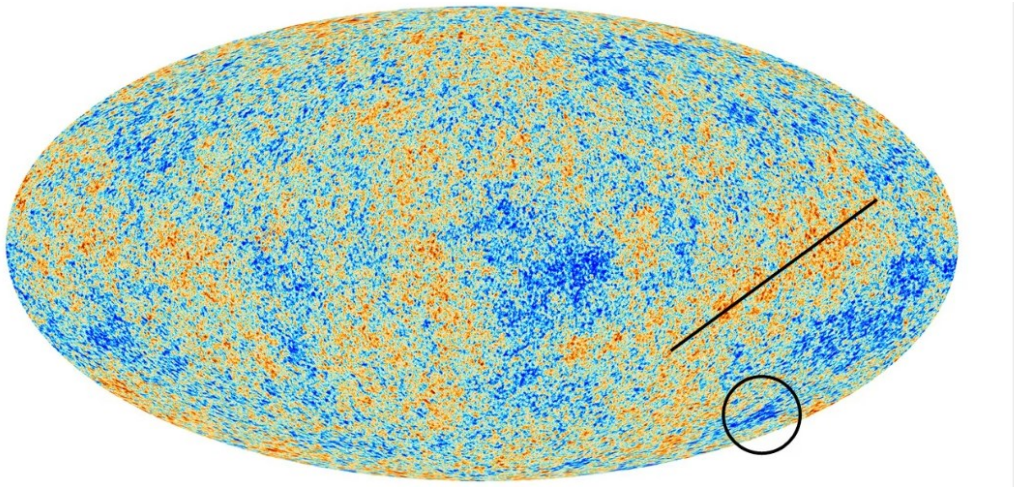
mission (2001–2010). Its data revealed two interesting features in the CMB — the **Axis of Evil** and the **CMB Cold Spot**. The Cold Spot is a region in the CMB that is significantly cooler than the rest of the CMB. The Axis of Evil is a long region of space that is significantly warmer than average temperature. Most interestingly, the Axis of Evil is aligned with the ecliptic. Neither the Cold Spot nor the Axis of Evil were expected from the big bang model, nor can the big bang model explain them.



The straight line represent the Axis of Evil and the circle represents the Cold Spot

5. Furthermore, why should a cosmic radiation field have a large anomaly that is oriented with the earth's orbit around the sun? Many scientists assumed that the **CMB Cold Spot** and the Axis of Evil were not real but were instead noise in the WMAP data. It was expected that both would disappear with more precise data. That opportunity came in 2009 when ESA launched Planck, a third satellite dedicated to the study of the CMB. Both the **CMB Cold Spot and the Axis of Evil**

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remain in the Planck data, indicating that both are real. There is no explanation for either in the standard big bang model.

iii. Additionally, a CMBR of about 2.3K was already proposed back in 1941 by astrophysicist and spectroscopist Andrew McKellar, so the value of CMBR was already suspected to be around 2.3K, so the 1965 COBE CMBR results were practically already known. This means that CMBR was known before the Big Bang, just as the expansion of the universe was, so they were not 'predictions' of the Big Bang.

iv. The cosmic microwave background also fails as evidence for the Big Bang because it casts no shadows on the foregrounds of galaxies, as should be expected. If the Big Bang were true, the light from the fireball should cast shadows in the foreground of all galaxy clusters, but only if it is really true that the radiation is coming from so far away. But the needed shadows are missing. More Info

5. **The Monopole Problem:**

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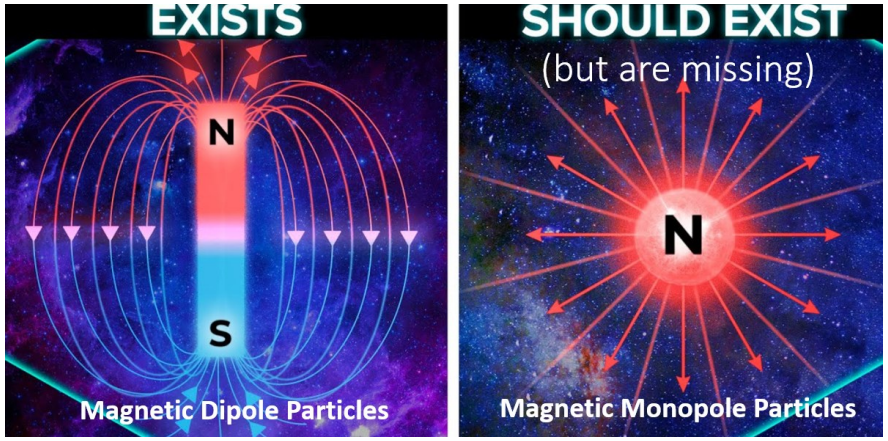
a. The Big Bang's predicts the creation of Magnetic Monopole Matter in the universe due to its perceived high temperature, but none is found. Inflation was also used to help explain the absence of "magnetic monopoles" that should have formed when magnetic and electric forces united, but which have not been found in the universe.

b. Inflation would hypothetically have stretched these forces out so thinly that they are not observable today. If this were the case, however, then there is no reason why standard elementary particles such as protons would not also be stretched too thin to detect.



6. The "Inflation" Problem:

a. **Inflation** is a hypothesis constructed by the adherents of the Big Bang Model to try to explain (or provide a gap fix) to the Big Bang theory in light of the challenges of the Flatness Problem, the Horizon Problem, The Magnetic Monopole Problem, and the extreme CMBR smoothness problem. Inflation was not an original part of the Big Bang model, but was added to address these challenges.

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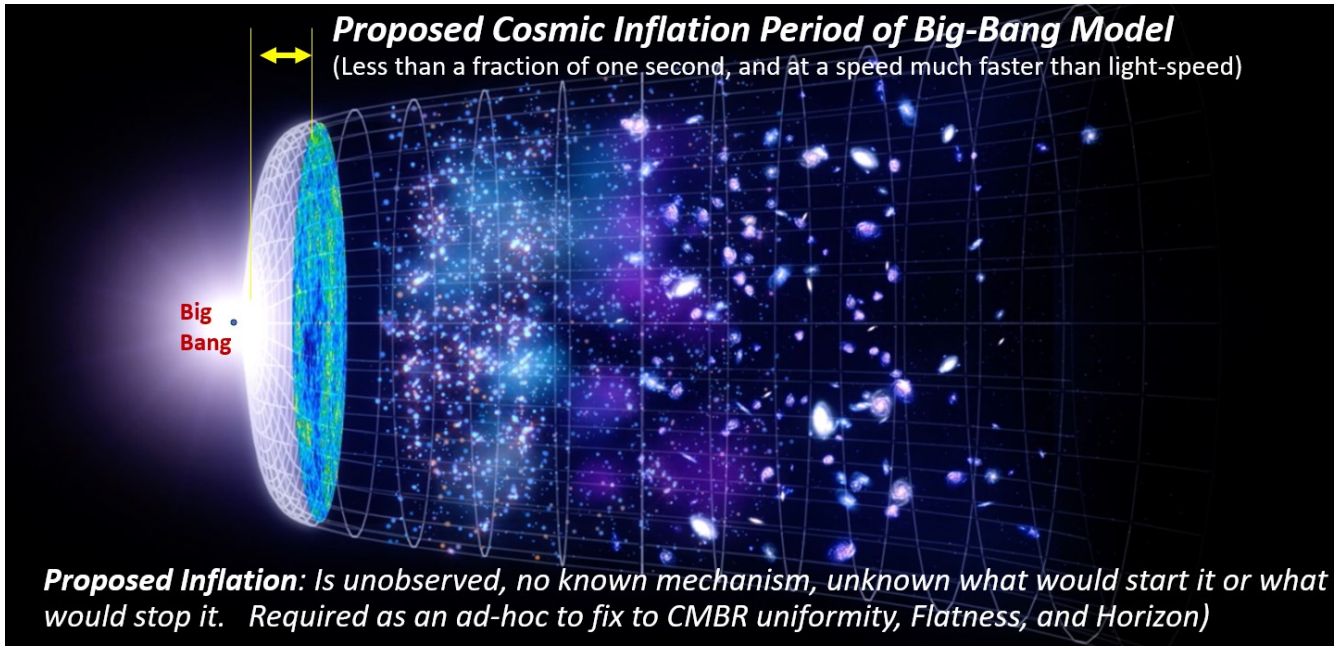
b. The Big Bang model suggests that the universe sprung out of a singularity (a finite point that contained everything, but which popped into existence from nothingness). The Model states that the universe came out of nothing and immediately created the laws of physics, time, energy, and space. And then for some unknown reason, within the 1st second of the birth of the Big-Bang, and by some unknown mechanism, **Inflation** started, and the universe grew at a pace faster than the speed of light to huge proportions, and then **Inflation** stopped for some unknown reason -- all these in less than one second from the beginning of time:



c. The proposed **Inflation** is the extremely rapid exponential expansion of the early universe by a factor of at least 10^{78} in volume (that is, the universe supposedly expanded to over a trillion x trillion x trillion x trillion x trillion x trillion times in

size in a less than a faction a second), driven by a negative-pressure vacuum energy density. It supposedly lasted from 10^{-36} seconds after the big bang to sometime between 10^{-33} and 10^{-32} seconds.

d. However, there is no known mechanism to cause this faster-than-light expansion (**Inflation**), and why it would start, and why it would stop.

   i. Cosmic Inflation also has its own unsolved "Speed of Light problem" since **Inflation** is said to have occurred much faster than the speed of light.
   ii. Some scientists have try to say that while matter cannot exceed the speed of light, space can. But it is said that **inflation** is also how energy (which is equivalent to matter) filled the universe so quickly, but energy itself cannot travel faster than the speed of light. "Cosmic Inflation" is under new scrutiny and suspicion even from the secular scientific community.
   https://web.archive.org/web/20140401081546/http:/cosmologystatement.org
   https://arxiv.org/pdf/0705.2462v1.pdf
   https://www.scientificamerican.com/article/cosmic-inflation-theory-faces-challenges/

7. The Antimatter Parity Problem

a. Energy Experiments convert energy into equal parts of matter and anti-matter.
b. The Big-Bang Model is said to produce matter from energy, but in our universe, we don't see a 50/50 mix of Matter/Antimatter; we see only 1 antimatter particle for every 1 billion matter particles.
c. The required equal production of anti-matter is missing:

> "… the Big Bang should have created matter and antimatter in the same amount. The fact that most of what we see is matter, and there is only about one part per billion of antimatter, means there is a violation of the most fundamental symmetries of physics, in a way that we can't explain with all that we know …"

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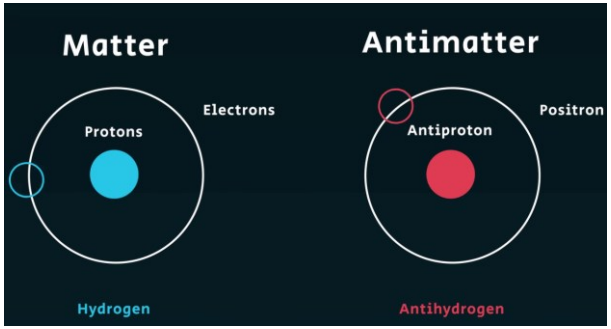
Ronald Fernando Garcia Ruiz, assistant professor of physics at MIT



d. In the Big Bang Model, equal parts of matter and anti-matter should exist, but they don't.

8. The "Quantum Fluctuations" Problem

a. This Proposition Remains Controversial and Questionable:

   i. The nature of quantum fluctuations remains controversial. While quantum theory yields probabilistic predictions of the statistics of apparently random individual experimental outcomes, the extrapolation of such statistical structures down to the microscopic scale in the absence of an experimental context is questionable. It conflicts with Bohr's philosophy, according to which quantum phenomena can only be defined and described in a given experimental context – one of the reasons that the application of quantum theory to the universe as a whole has always been seen as questionable.

b. Definition:
   i. In quantum physics, a quantum fluctuation (also known as vacuum fluctuation) is the temporary random change in the amount of energy in a point in space. They are minute random fluctuations in the values of the fields which represent elementary particles.

ii. Vacuum energy is an underlying background energy that exists in space throughout the entire Universe. Vacuum energy is a special case of zero-point energy that relates to the quantum vacuum. Vacuum fluctuations appear as virtual particles, which are always created in particle–antiparticle pairs. Since they are created spontaneously without a source of energy, vacuum fluctuations and virtual particles are said to violate the conservation of energy.

iii. This is **theoretically** allowable because the particles annihilate each other within a time limit determined by the uncertainty principle so they are not directly observable. [Theoretically, the larger the quantity of virtual particle creation, the shorter the duration of their existence].

c. The Key Problems with Quantum Fluctuations

1. Borrows (Steals) What It Does Not Have:

   a. Requires the prior existence of the Laws of Physics and Quantum Mechanics – both of which would not exist in an ex-nihilo (out of nothing) Big-Bang model.

   b. Requires the prior existence of Time, Space, and the Vacuum Energy of Space, all which would not exist in an ex-nihilo (out of nothing) Big-Bang model.

   c. Theoretically, if Vacuum fluctuations did produce virtual particles, they are always created in particle–antiparticle pairs, and so would annihilate each other – There for no universe.

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d. It is has been said that "Quantum Fluctuations" could violate the "Law of Conservation of Energy," but even if that were possible, the fact that the larger the amount of particles the shorted their survival existence, that is, a big universe would instantaneously disappear, estimated lifetime would be around 10^{-103} seconds (that is, less than one second). (DMTBB, page 120)

e. If we were to say that the Big Bang and Quantum Fluctuations did not arise "out of nothing," but from something, then we are forced to go to an "eternal universe" model. Please see the "eternal universe" model section above.

9. The Dark Energy and Dark Matter Problem:

i. Big Bang adherents tell us that the universe is made up of 68% "dark energy" and 27% of "dark matter." Both of which are unseen and unmeasurable, and are only implied indirectly by models. Only 5% is the regular matter and energy we can observe.

ii. Dark energy and matter have never been observed or measured, nor can they be, due to their dark (unobservable) nature.

iii. It seems presumptuous to state a model is proven that acknowledges that it knows only 5% of the make up our universe.

10. Big-Bang Model Mis-aligns with recorded history:

i. The Big-Bang model says the universe is around 13.77 billion years old, but yet the only known recorder history in the universe goes back only 5100 years. *(more on this in Section 6, The Young Universe)*

ii. This evidences a huge misalignment between practical expectations.

1. Thought: If the Big-Bang proceeded just 1% faster, we would have at least 1 million years of recorded history, and if proceeded 1% slower, the universe would have to wait another million years for recorded history to start.

2. The Young Universe model aligns well with the only known recorded history in the universe, which is 5100 years.

11. The Big Bang Conflicts with the Sequence of Events in Genesis Chapter 1:

a. Since both models rest upon at least two super-natural miracles to even exist, it is typically best to go with the model that is supported by:

i. An original eye-witness, who is capable and reliable

ii. An original eye-witness who is Eternal, Omnipotent, and All-Powerful

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Comparing Sequence of events of Genesis to the Big-Bang

#	Genesis Creation Order	Genesis Day #	Genesis Chapter 1	Big-Bang - Evolutionary Order
1	Light on earth before sun	1	Vs. 2	Sun before light on earth
2	Earth before sun	1	Vs. 2	Sun before earth
3	Earth before stars	1	Vs. 2	Stars before earth
4	Oceans before Sun	2	Vs. 6-9	Sun before Oceans
5	Atmosphere before sun	2	Vs. 6-9	Sun before Atmosphere
6	Birds before reptiles	5	Vs. 20	Reptiles before birds
7	God Created Man	6	Vs. 26	Accidental Natural Processes Accidentally created Man
8	Man existed before death	6	Vs. 26	Death existed before Man
9	Man before thorns and thistles	6	Vs. 26	Thorns and thistles before Man

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5) What is the Multiverse Concept?

a. This Session does not go deep into the details of the concept of a Multi-Verse (that is, many co-existing, isolated, unobservable, and unknown and unknowable universes), but will only summarize for the following reasons:

i. The Multi-Verse is unobserved, unproven, and unprovable. It appears to be the result of a "gap" fix to a problem in the Big Bang Model.

ii. The Multiverse problem seems to stem from a needed ad-hoc fix to the Big-Bang model, that is, Cosmic Inflation. The concept says once it starts, it will not stop, so it keeps spitting out unobserved, unknown and unknowable, theoretical universes.

iii. The following problems also make the concept unworthy for discussion:

1. By definition the Multi-Verse can never be observed, measured, or experienced, and therefore is outside the realm of natural science (which is based on observation and repeatable experimentation).
2. If a model of the Multi-Verse had an eternal universe or universes, and operated with our current laws of physics, then the **Law of Entropy** would have already run it down to non-functionality.
3. If a model of the Multi-Verse did not have an eternal universe or universes, but had a beginning, and operated with our current laws of physics, then the **Law of Conservation of Energy** would have been violated, that is, something coming into existence out of nothing from nature.
4. Even if there was a theoretical multiverse, we could never know it, and this multiverse theory could not explain why life exists in our universe, since the known laws of physics in our universe prevent life coming from non-life.

For more information on this concept of the "Multi-Verse" please Click Here.

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6) The Young Universe Model

#	Topic Area	Details
1	**Projected age of the Universe**	**Typically, <10,000 years**. ***(in Session #13 we will explore models and evidences for age of the earth)***
2	**Basis for concept and the Age Calculation**	1. Straight forward reading of the creation account in Genesis Chapter 1. 2. Acknowledgement the unlimitedness of God, being eternal and Almighty (Revelations 1:8). 3. Strongly aligns with the only know History in the he universe (historical records), which has existed for only 5100 years. 4. Since all models require at least two miraculous (super-natural) events, selecting one that has a supernatural, omnipotent entity as the source of the universe is logically stronger and more cogent. 5. All other models are created by individuals who are finite, and their models also have conflicts and/or challenges with the laws of nature (physics)
3	**Required Assumptions used in model**	1. The existence Eternal Omniscient, omnipotent, Creator exist, and can and has communicated clearly to mankind thru the Bible. 2. Like all other models of the age of the universe, accept the reality of at least two super-natural miraculous events.
4	**Scientific Problems and Challenges**	1. Biblical narrative conflicts with the source and sequence of unobserved naturalistic view for the origin of the universe 2. **Biblical narrative conflicts with the some interpretation of data observed today when extrapolate backwards to produce estimates of origin ages, based upon the following assumptions:** 1) phenomenon are understood correct and acutely, 2) uniformitarian requirement throughout history, 3) Universe was and remains a closed system, 4) a-priori rejection o the possibility any transcend involve from a super-natural source, and 5) all evidences for a young universe are false. ***Note: "Light-Time Travel" Models with be Reviewed in the next session, Session-#12***
5	**Scientific support to this model**	**Please see the detailed section**

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a. Summary of Evidences that support a Young Universe Model:

i. **Clarification:** The Young Universe model does not reject the proposition that universe is large or that the speed of light is large, which would currently yields a light-transit time far in excess of the biblical scale. While the Young Universe model does accept that the universe is large from a cosmic frame of reference, but in terms of earth-clocks the entire universe is young:

1. A brief review of some "Young Universe Cosmology" models is below.
2. Additionally, our next session, Session #12, will review Light-Travel Models.

ii. **Evidences for Young Universe under 10,000 years:**

1. Planet earth's magnetic field:

a. The earth is surrounded by a magnetic field that protects living things from solar radiation. Without it, life could not exist. That's why scientists were surprised to discover that the field is quickly wearing down. At the current rate, the field and thus the earth could be no older than 20,000 years old.

b. Reliable, accurate, published geological field data have emphatically confirmed the young-earth model: a freely-decaying electric current in the outer core is generating the magnetic field.5 Although this field reversed direction several times during the Flood cataclysm when the outer core was stirred (Figure 1), the field has rapidly and continuously lost total energy ever since creation (Figure 2**). It all points to an earth and magnetic field only about 6,000 years old.** Click here to read the full article

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2. **Mercury's magnetic field decay**
   a. In 1974 and 1975, the Mariner 10 spacecraft measured Mercury's magnetic field strength with its onboard magnetometer and sent the data to earth. The astronomers analyzing the data at the time found that the average magnetic moment was 4.8 x 1022 gauss cm3, which yields a field strength "about 1% that of the Earth."

   b. In 2008, Messenger flew past Mercury and captured a magnetic field measurement … *Science* authors wrote that the field strength for Mercury is "~27% lower in magnitude than the centered-dipole estimate implied by the polar Mariner 10 flyby." This confirms that Mercury's magnetic field is rapidly diminishing, which in turn confirms that the field must only be thousands of years old—just as the creation model predicts. Click to read full article

3. **The oldest recorded history in the universe** is only 5100 years old (see details in section **5.a.VI** below).

4. **Original Observer, eye-witness account**: The Bible, especially as recorded in Genesis chapter 1, and see Isaiah 48:15. *[PS: a future upcoming Session will cover the evidence for the divine inspiration, textual accuracy, the reliability, and predictive accuracy of the Biblical scriptures.]*

NOTES:

a. In upcoming Session #12, we will review "Distance-Light Travel Models."
b. In upcoming Session #13, we will review "Age of Earth Clock Models."

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iii. **Evidences for a Young Universe** (where Billions of years are NOT possible, and so neither the Big Bang):

Foundational Principle on estimating Historic Past Ages:

Neither Materialists nor Creationists can use science to *prove* the age of the universe because science can only deal with what is observable now. We can measure the rates of all manner of things in the present. However, to use these as 'clocks' to estimate ages, we have to assume a history and other assumptions, which in turn depends upon our *beliefs* about where we came from. The Bible gives us an eyewitness record of what happened, the order, and the timeframe, which 'science' cannot tell us.

1. **Comets' Lifetime**

a. A comet spends most of its time far from the sun in the deep freeze of space. But once each orbit a comet comes very close to the sun, allowing the sun's heat to evaporate much of the comet's ice and dislodge dust to form a beautiful tail. Comets have little mass, so each close pass to the sun greatly reduces a comet's size, and eventually comets fade away. They can't survive for billions of years.

b. Given the loss rates, it's easy to compute a maximum age of comets. That maximum age is only a few million years. Obviously, their prevalence would make sense if the entire solar system was created just a few thousand years ago. The proposed Oort Cloud to produce new comets has never been observed. Click here for article

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2. Young Blue stars

a. Blue stars are the biggest and brightest of all 'main sequence' stars, but this means they burn up their nuclear fuel very fast. Indeed, they burn so fast that the biggest ones could not last more than a million years, and the smallest around 10 million years. Yet blue stars abound in spiral galaxies, including our Milky Way. This suggests that these galaxies cannot be even one million years old.

b. This problem for the belief that the galaxies are billions of years old is said to be 'solved' by assuming the blue stars formed more recently than the rest of the galaxy. However, no one has observed such star formation and there is not even a viable mechanism for it to happen. Click here for full article

3. Spiral Arms of Galaxies

a. **Galaxies wind themselves up too fast.**

i. The stars of our own galaxy, the Milky Way, rotate about the galactic center with different speeds, the inner ones rotating faster than the outer ones. The observed rotation speeds are so fast that if our galaxy were more than a few hundred million years old, it would be a featureless disc of stars instead of its present spiral shape. *(Scheffler, H. and Elsasser, H., Physics of the Galaxy and Interstellar Matter, Springer-Verlag (1987) Berlin, pp. 352-353, 401-413).*

ii. Yet our galaxy is supposed to be at least 10 billion years old. Evolutionists call this "the winding-up dilemma," which they have known about for fifty years. They have devised many theories to try to explain Spiral galaxy NGC 1232 in constellation Eridanus. The same "winding-up" dilemma also applies to other galaxies. For the last few decades, the favored attempt to resolve the puzzle has been a complex theory called "density waves." The theory has conceptual problems, has to be arbitrarily and very finely

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tuned, and has been called into serious question by the Hubble Space Telescope's discovery of very detailed spiral structure in the central hub of the "Whirlpool" galaxy, M51.2

iii. Creationists long have argued that spiral arms should not exist in a very old universe, and so the persistence of spiral arms suggests that the universe is very young.

Spiral galaxy NGC 1232 in constellation Eridanus. Photo: European Southern Observatory

b. However, because most evolutionary astronomers begin with an assumption that the universe is billions of years old, they are convinced that some mechanism must continue to uphold spiral arms. If they really had a satisfactory answer, they wouldn't continually search for a new solution. Their failures show that creationists' arguments should not be so easily dismissed. Click here to related article

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c. Jupiter's Moon "Io" & its Volcanoes

i. Volcanism on Io In 1979, the Voyager spacecraft revealed many volcanic eruptions on the surface of Io, the innermost Galilean satellite of Jupiter. Volcanism requires an internal heat source. As with the Jovian planets, primordial heat is a possible source of the heat, but the timescale for this mechanism is far too short to work if the age of Io is 4.5 billion years.

ii. To explain Io's internal heat, secular scientists have resorted to tidal flexing as a heat source. Spencer has reviewed the tidal mechanism to explain Io's internal heat and found it wanting. Therefore, volcanism on Io provides good evidence that it cannot be billions of years old.

iii. If "Io" existed for millions of years, it should be cold and dark; its excessive heat fits a young universe – one that has been cooling for only thousands of years. (GTTU, p74)

4. Saturn's Titan Moon really looks Young

a. Apparently, ethane production in Titan's atmosphere has not been going on for very long!

Due to the greater sunlight at lower latitudes, methane lakes near the equator should have evaporated after just thousands of years. And secular scientists acknowledge that Titan's surface shows "surprisingly little erosion."
Titan really does look young. The presence of atmospheric methane, the absence of large ethane seas, the presence of equatorial methane lakes, and

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little surface erosion are all indicators that Titan's maximum possible age is much younger than uniformitarian scientists expected. And Titan's true age could be just thousands of years. Click to read full article

iv. A Super-natural Creation, the Hubble Constant, and a "What If:"

a. If the Hubble Constant is accurately measuring the expansion (receding) of space, then the initial 'spreading out' of the heavens by the Creator (Isaiah 42:5) may well have been a near-instantaneous event [similar to the faster-than-light-speed which the Big Bang also proposes (Inflation).

b. Following this origin, a slower outward expansion of the universe may have continued, as is measured today [possibly to keep the universe in equilibrium].

c. Thus, the actual H_0 value may have been a step function as shown in Figure 1 below. The near-infinite value of H_0 would have applied to the fourth day.

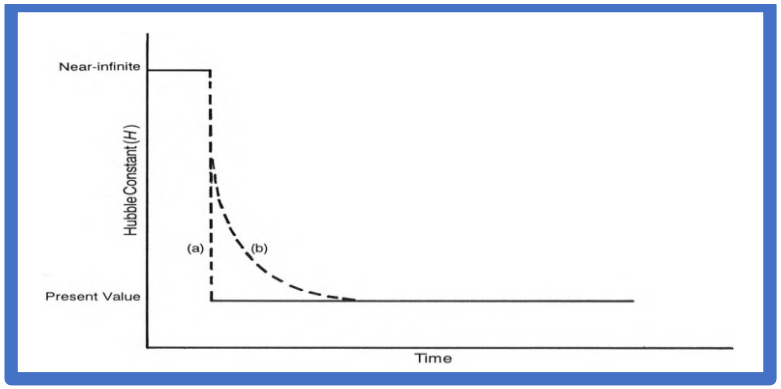

Figure 1

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i. Since the Big-Bang Model also proposes an unseen, unknowable physical event called "Inflation" where super-speeds were employed, therefore on that basis, it is also reasonable to suggest the use of a super-speed (faster than light-speed), for the transfer of light during the six days of creation, then reverting to current speed of light, upon which the Hubble Constant is based.

v. Sample of some Historic views as to a young "Ages of the Universe":

1. Historically, many scientists, authorities, and nations viewed the age of the universe as being very young:

Source of Creation Date	Authority	Creation to Navitivity (BC)	Age of Universe (years)
Alfonso X (Spain, 1200s)	Muller	6984	8984
Strauchius	Gyles (1632–1682)	6484	8484
India	Gentil, French astronomer c.1760 6204	6174	8174
Babylonia	Bailly (French astronomer, 1736–1793)	6158	8158
China	Bailly	6157	8157
Diogenes Laertius (Greece 3 Cent.)	Playfair	6138	8138
Egypt	Bailly	6081	8081
Septuagint (LXX)	Albufaragi	5586	7586
Josephus (1 Century Jew)	Playfair	5555	7555
Ussher, Spanheim, Calmet, Blair, etc.		4004	6004
Kepler (1571–1630)	Playfair	3993	5993
Luther (1500s)		3961	5961

"A New Analysis of Chronology and Geography, History and Prophecy," (Dr. Hales, vol. 1, p. 210 [published in 1830]

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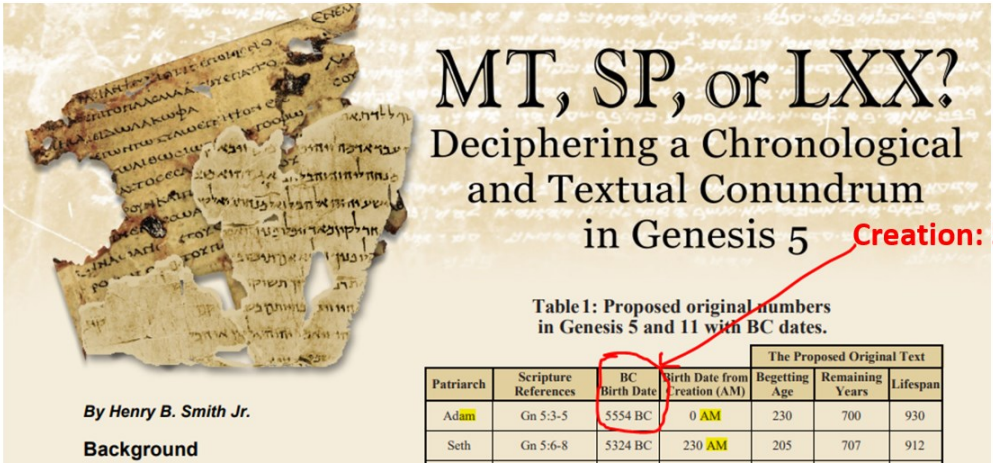
2. **The Jewish calendar also dates a young universe date;** this year is 5784 accordingly from the date of creation (the universe). The Jewish calendar is the oldest continuous calendar system still in use in the world.

3. **Biblical Genealogy dates from Adam to Jesus:**
   - **a.** Archeology Magazine, ***Bible and Spade***, did and analysis of genealogy dates of Adam to Jesus, comparing the Masoretic Text (MT), Septuagint (LXX), and the Samaritan Pentateuch (SP) to come to a propose biblical date of creation (or at least Adam's creation) as 5555 BC. Adding the 2028 years since the birth of Christ (5 BC), we come an estimated date of creation (and the universe) as **7583 years old.**
   - **b.** The calculated age of the universe from the young universe model (from a Biblical perspective) ranges from 8984 years old to 5784 years old**, with 7578 years from creation** being a good middle ground (5554 = 2023 = 7578).



Source: https://biblearchaeology.org/images/Genesis-5-and-11/Smith-Henry-Winter-2018-BAS_MT-SP-or-LXX.pdf

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4. The Young Universe model is not surprised by the brevity of Recorded History:

a. **According to [secular Archeologist Colin Renfrew]** (in "Before Civilization" – see below), history stops at 3100 bc (everything beyond that is considered prehistoric). Therefore, any dates beyond 3100 bc can only be based indirectly on assumptions.

b. Additionally, if we want "calendar accuracy" in our history, then according to Renfrew history is reduced to just 3895 years (that is, only back to 1872 bc).

c. It is not at all surprising to only have around 5130 years of history for the young universe model, but it is very surprising for the "eternal universe" model or for a "13.77 billion years old Big Bang universe to have so little proportional history.

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important of these refers to the seventh year of the reign of King Sesostris III, of the Twelfth Dynasty. In this year a heliacal rising of the star Sothis was recorded on the sixteenth day of the eighth month of the civil calendar. This gives us exactly the information needed to calculate the time taken to displace the calendar from the original coincidence of New Year's Day with the heliacal rising of Sothis at the beginning of the appropriate Sothic cycle in 2770 B.C. The date in question corresponds to 1872 B.C., so that the reign of Sesostris III is now set with some confidence from 1878 B.C. to 1843 B.C.

1878 BC.

This is, in fact, the earliest fixed calendrical date in human history. And while some uncertainties of detail makes possible an error of a decade or so, it is a date which Egyptologists accept with considerable confidence. Using the information from the annals, the end of the Eighth Dynasty, with which the so-called 'Old Kingdom' of Egypt terminated, may be set at 2160 B.C. As we have seen, the Turin Royal Canon reports a total duration for the Old Kingdom of 955 years. Some scholars think this may be inaccurate by a couple of centuries or so, but if the figure is accepted, the beginning of the Old Kingdom of Egypt – the founding of Egypt's first historic dynasty – can be set close to 3100 B.C.

3100 BC.

COLIN RENFREW

BEFORE CIVILIZATION

THE RADIO CARBON REVOLUTION AND PREHISTORIC EUROPE

King lists and other records are also preserved from Mesopotamia, but unfortunately many of them are later copies of the original texts. The Mesopotamian chronology is less reliable than the Egyptian, and it does not go back so far.

This date of 3100 B.C. thus sets the limit of recorded history. No earlier dates can be obtained by calendrical means, and indeed the dates cannot be regarded as reliable before 2000 B.C. There is thus a theoretical limit beyond which the traditional chronology for Europe, based, as it was, ultimately on Egypt, simply could not go. Any dates before 3000 B.C. could be little more than guesswork, however persuasive the arguments and the evidence after that period.

https://www.amazon.com/Before-civilization-radiocarbon-revolution-prehistoric/dp/0394481933 **(1973, page 28 & 29)**

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7) Ending Thoughts:

a. **Conclusion to Consider: if Matter Only → then Extinction, if by Creator → then Destiny**

Age Models (typical presentation, variations exist)	**Models' Metaphysics Domain**	**Majority of Adherents to this Age model**	**Does Model's Sequences of Events Line up with Genesis chapter-1?**	**Does this Model Support the existence of Human Free-Will, Soul and, Spirit?**	**Does this model support an eternal purpose for each person?**	**Model's View of Mankind & the Individual?**
1. Eternal Universe Models	**Matter is all that is.** No spirit realm allowed.	**Atheists & Materialists**	**No**	**No**	**No**	**An accidental & temporal chemical machine, destined for extinction.**
2. Big-Bang Universe	**Matter is all that is.** No spirit realm allowed.	**Atheists & Materialists** (some Theists)	**No**	**No**	**No**	**An accidental & temporal chemical machine, destined for extinction.**
3. Day-Age Universe	Both Spirit and Natural realms exist	**Theists**	**Yes**	**Yes**	**Yes**	**A planned being, created in the image of God, with an eternal future.**
4. Young Universe & Creation	Both Spirit and Natural realms exist	**Theists**	**Yes**	**Yes**	**Yes**	**A planned being, created in the image of God, with an eternal future.**

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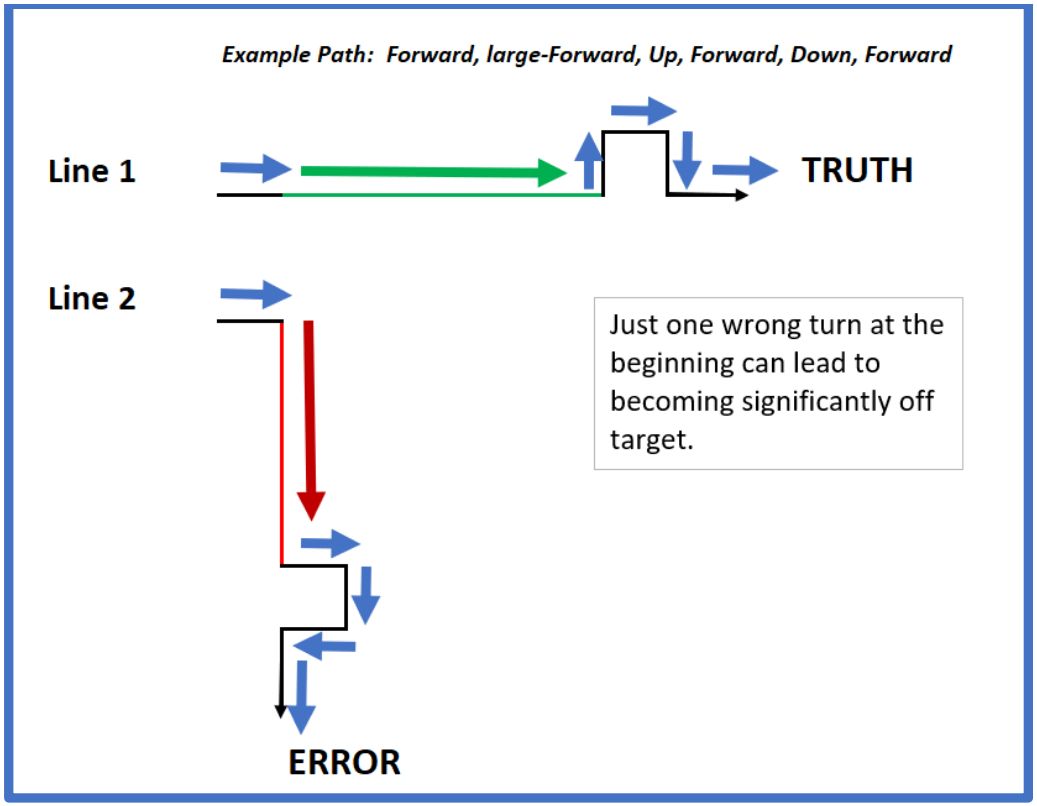
b. Just one mis-step can lead to Error: Being completely accurate in every step of math, science, or logic, but with the exception of one mis-step, can lead to a false direction and conclusion.

Psalms 14:1 "The fool says in his heart, "There is no God." [This would be a starting mis-step]



Answers 4 Seekers, Topic #11A

8) Reading Resources:

c. **The Expanse of Heaven (EOH), Faulkner, 2017** (https://www.amazon.com/Expanse-Heaven-Creation-Astronomy-Intersect-ebook/dp/B07653FRWN)

d. **Guide to the Universe (GTTU), ICR, 2016** (https://www.amazon.com/Guide-Universe-Institute-Creation-Research/dp/193558782X/ref=sr_1_1?crid=67QEI4VKMPXP&keywords=Guide+to+the+Universe%2C+ICR&qid=1698621445&sprefix=guide+to+the+universe%2C+icr%2Caps%2C165&sr=8-1)

e. **Dismantling the Big Bang (DTBB), Williams and Hartnett, 2005** (https://www.amazon.com/Dismantling-Big-Bang-Alex-Williams/dp/0890514372/ref=sr_1_1?crid=15RT9L3J9LXY9&keywords=dismantling+the+big+bang&qid=1698621556&sprefix=dismantling+the+big+bang%2Caps%2C180&sr=8-1

f. **Creation Basics & Beyond (CB&B), ICR, 2020** (https://www.amazon.com/Creation-Basics-Beyond-Depth-Evolution/dp/1935587307/ref=sr_1_1?crid=1DY4PEPE0TFDT&keywords=e.+Creation+Basics+%26+Beyond%2C+ICR&qid=1698621778&sprefix=e.+creation+basics+%26+beyond%2C+icr%2Caps%2C152&sr=8-1)

g. **Evolution's Achilles Heel (EAH), Batten & Wieland, 2015** https://www.amazon.com/Evolutions-Achilles-Heels-Ph-D-Scientists/dp/192164382X

h. **Bucking the Big Bang (BTBB), Eric Lener, New Scientist 2004.** Letter Signed by 405 Researcher, Scientists, and Engineers. https://web.archive.org/web/20140401081546/http://cosmologystatement.org/ and https://zephr.newscientist.com/article/mg18224482-900-bucking-the-big-bang/

i. **ΛCDM cosmology - how much suppression of credible evidence, Lieu, 2007, 0705.2462v1** https://arxiv.org/pdf/0705.2462v1.pdf