

COSMOLOGY AND CREATION

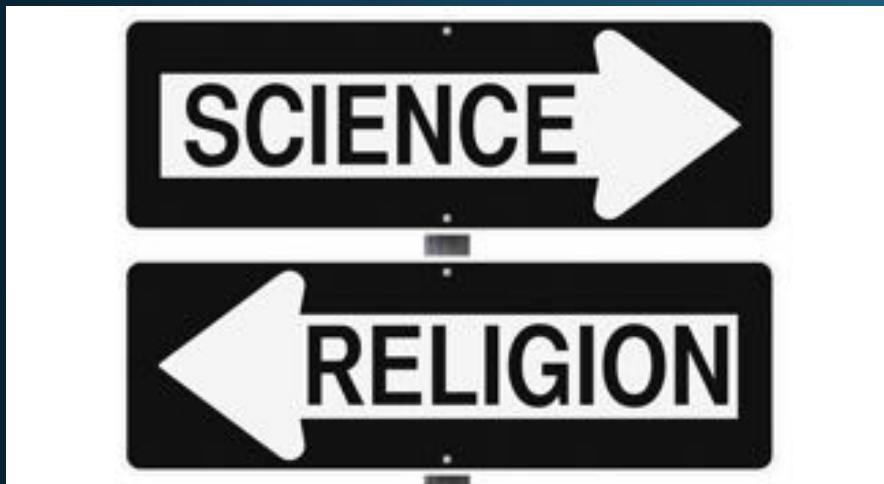
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**GENESIS OR THE BIG BANG?**

**DO WE REALLY HAVE TO CHOOSE?**

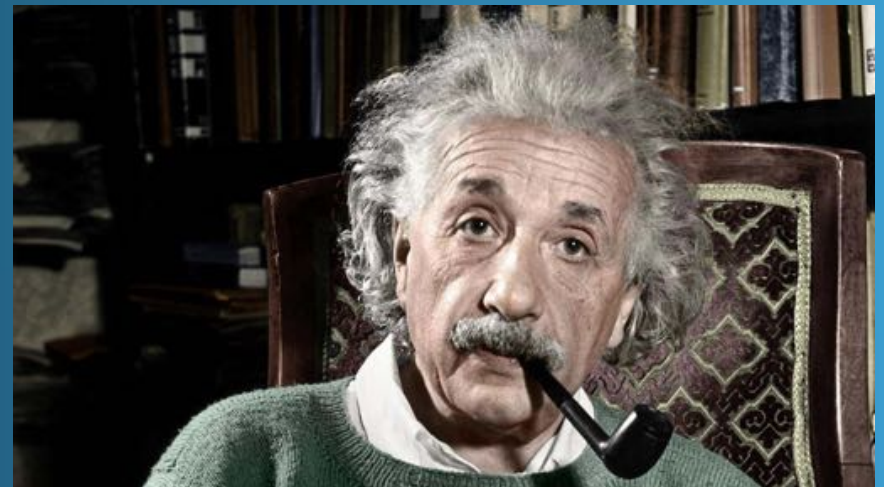
# SCIENCE AND FAITH

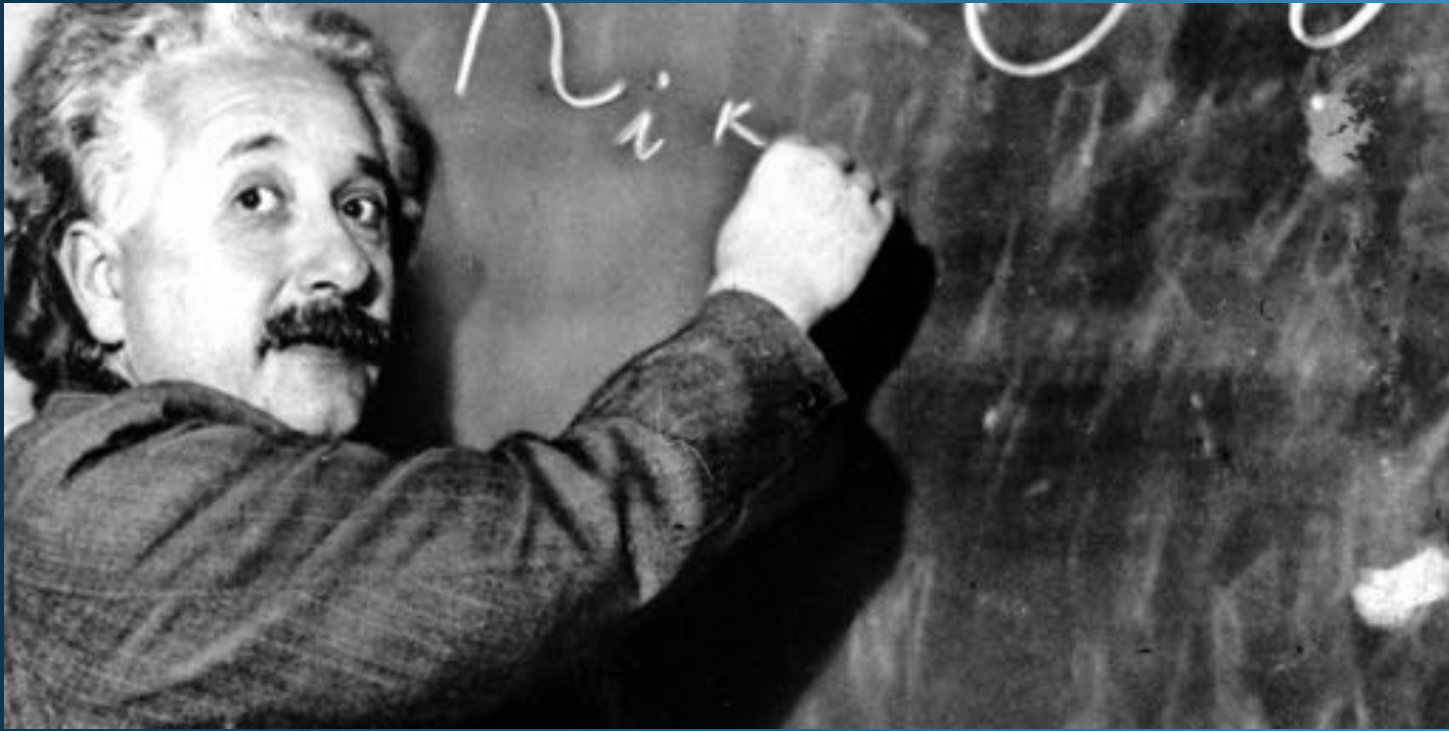
- ▶ Popular Belief: Because of scientific progress, we no longer need to rely on mythology or religion to understand the natural world. As a result, many people now think that faith is unnecessary and is just an emotional choice. Some believe that evidence for God's existence is not even possible.



# SCIENCE AND FAITH

- ▶ Reality: Science actually provides many kinds of evidence for the existence of God. About 40% of scientists claim to be *theists* (believers in a personal God).
- ▶ Another 20% are *deists* (believers in an impersonal God - like a "force" - among these, Albert Einstein), or *agnostics* (who are open to the possibility of God).





**Albert Einstein, the Father of General Relativity, once said:**  
*"Certain it is that a... rationality and intelligibility of the world lies behind all scientific work of a higher order... This firm belief... of a superior mind that reveals itself in the world of experience, represents my conception of God."*



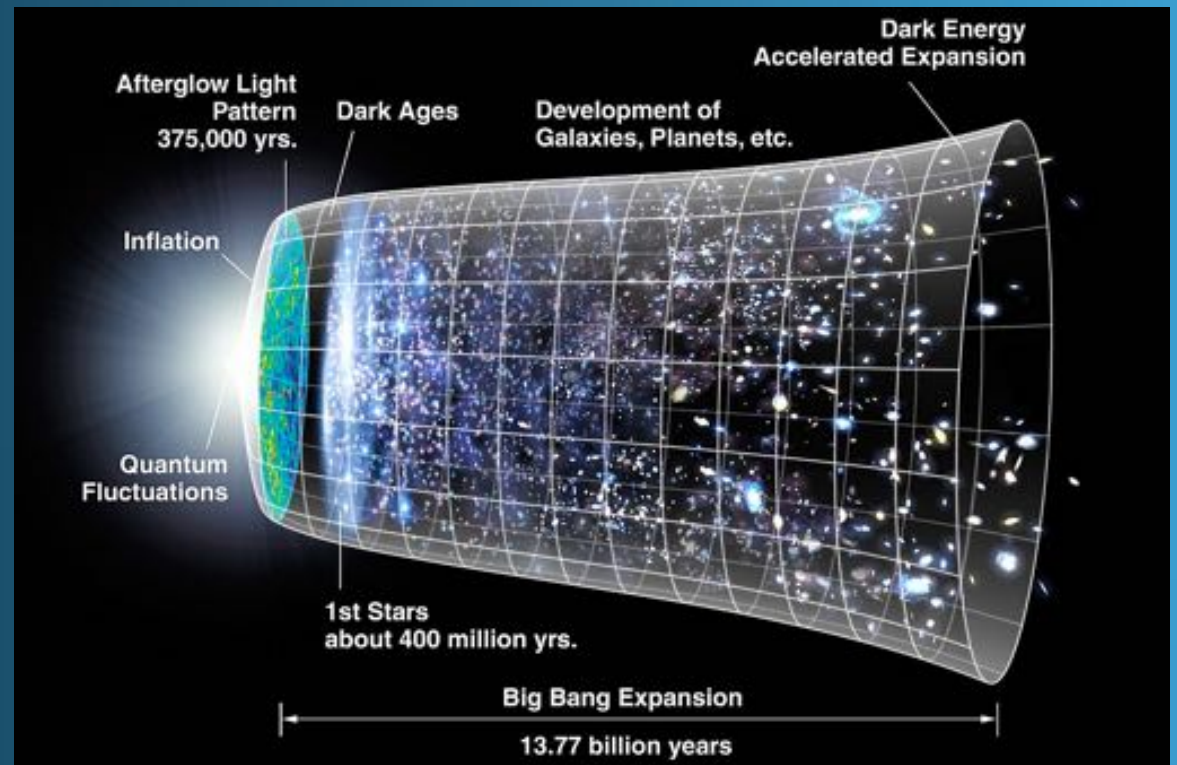
# I. WHAT IS THE BIG BANG THEORY?



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- ▶ Big Bang Theory: describes how the universe expanded from a very high-density and high-temperature state. If the observed conditions are extrapolated backwards in time using the known laws of physics, the prediction is that just before a period of very high density there was a singularity which is typically associated with the Big Bang.

[Video - Big Bang Theory Explained](#)



# II. HISTORY OF THE BIG BANG THEORY

- ▶ Before 1927 there was no evidence whether or not the universe had a beginning. Then, Georges Lemaitre, proposed the Big Bang Theory. It explained something that has perplexed astronomers; that the further away a galaxy is from us, the faster it is moving away.

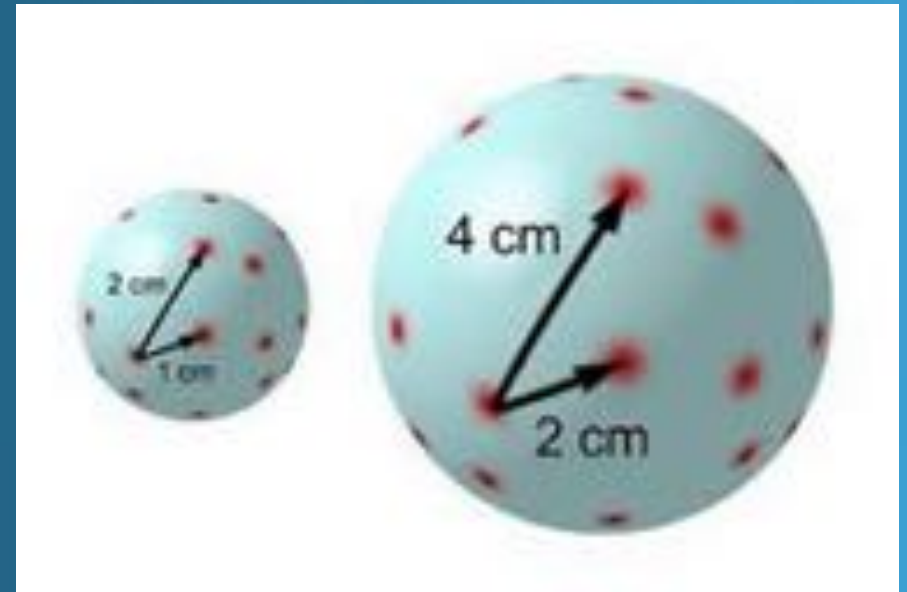
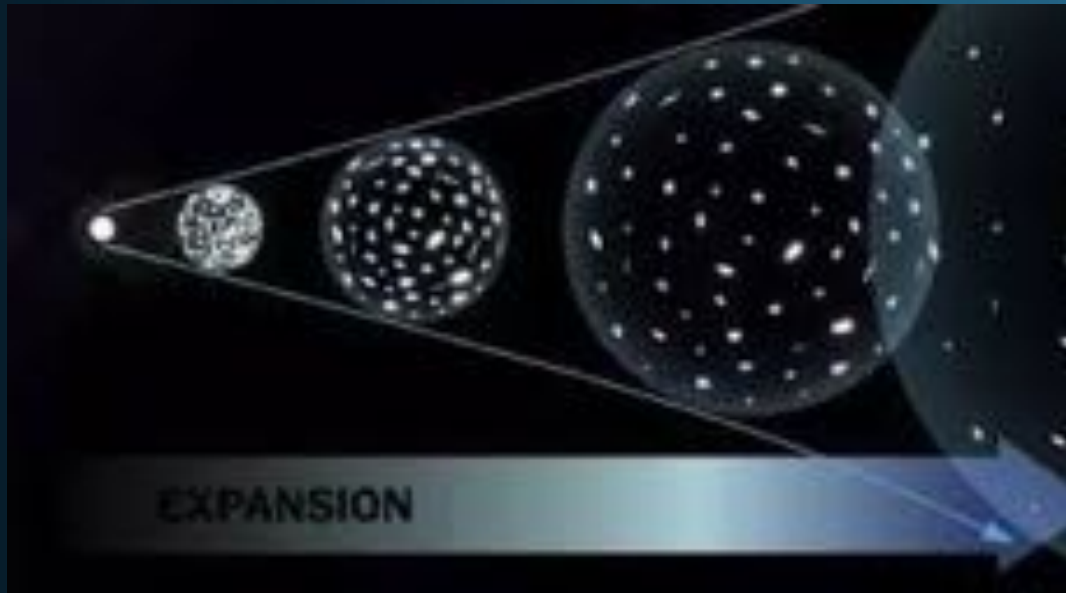


- ▶ Father Georges Lemaitre was a Belgian Catholic priest and scientist.
- ▶ His faith in God lead him to believe the universe was purposed, planned, and could be understood of researched.



# II. HISTORY OF THE BIG BANG THEORY

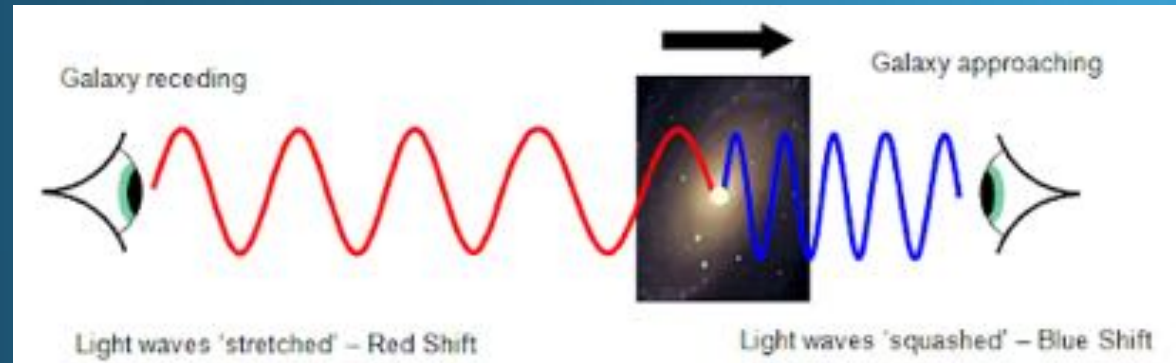
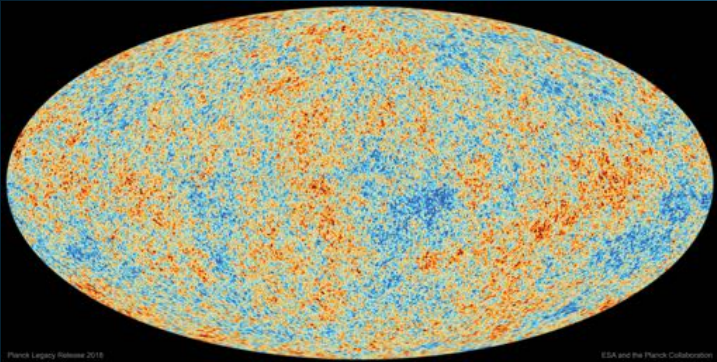
- ▶ Fr. Lemaitre theorized that galaxies were not moving through empty space, but rather that the space between them was stretching, just like the dots on a balloon move away from one another at increasing rates of speed while it is inflated.





### III. BIG BANG THEORY AND THE EXPANSION OF THE UNIVERSE

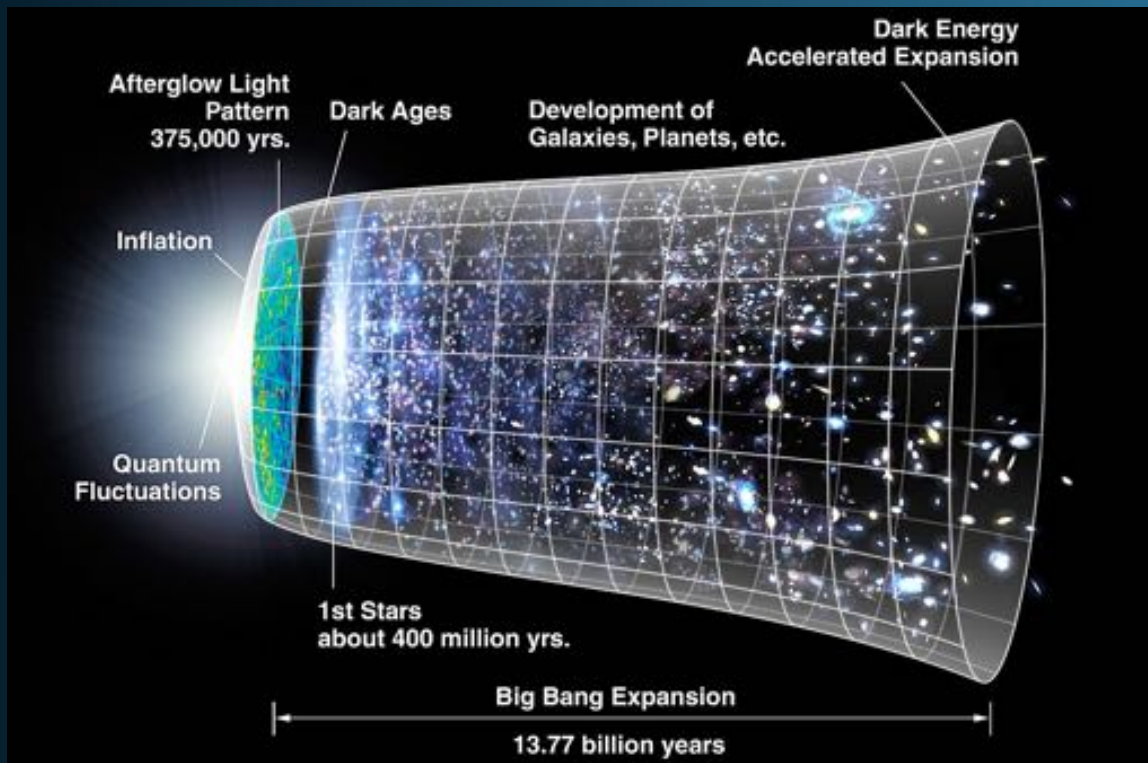
- ▶ Edwin Hubble (1929) observes the “[red-shift](#)” of distant galaxies.



- ▶ Arno Penzias and Robert Wilson (1965) measure Cosmic Microwave Background (CMB) equally distributed throughout the universe.
- ▶ The Planck Space Observatory (2013) finished a four-year scan of the [Big Bang CMB and verified these results.](#)

### IV. BIG BANG – WHAT DOES IT ACTUALLY PROVE?

While the Big Bang is evidence for the *expansion* of the universe, it only suggests the *beginning* of a universe...



- And so, we need to ask, "is there any current scientific evidence that *would* point to the universe having a finite beginning?"

### V. EVIDENCE THAT SUGGESTS THE BEGINNING OF A UNIVERSE

a. In 2003, three of the most prominent physicists in the world, **Borde** (UC Santa Barbara), **Guth** (MIT), **Vilenkin** (Tuft's University, Boston), devised the **BGV Theorem**.

In it, they attempt to conclude that any expanding universe, without exception, *must have a beginning (spontaneously created)*.

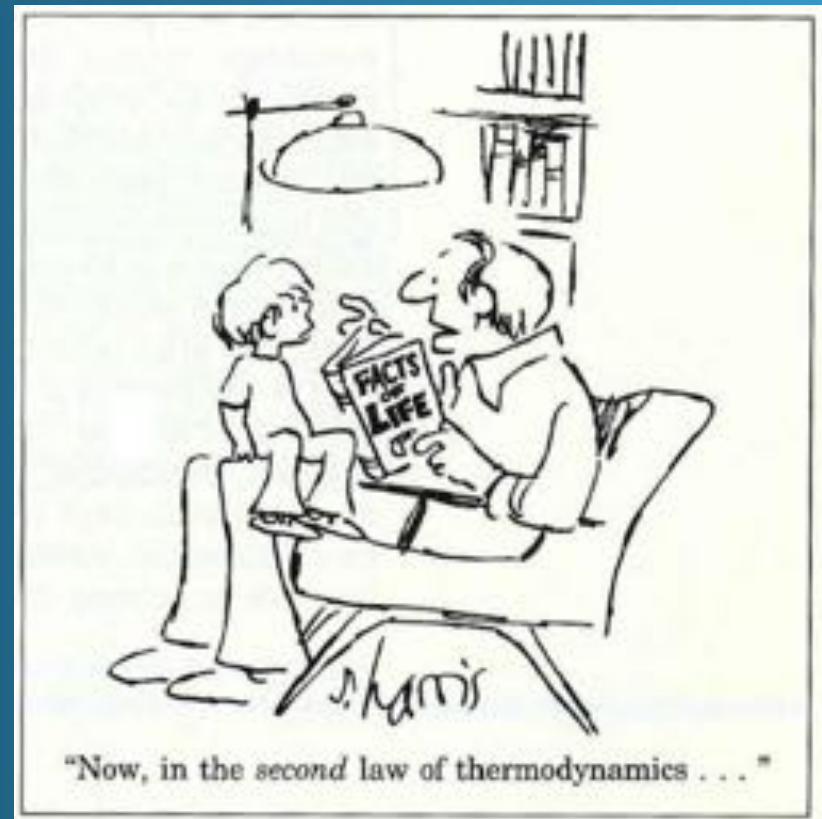


## V. EVIDENCE THAT SUGGESTS THE BEGINNING OF A UNIVERSE

b. A second kind of evidence for our universe having a beginning is **Entropy** (*the 2nd Law of Thermodynamics*)

Entropy is one of the most fundamental laws of physics.

Einstein, and most other physicists, believe it can never be disproven.





## COSMOLOGY AND CREATION

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**Entropy** means that every physical system - including our universe and even a multiverse (if one existed) - will eventually run-down (like a wind-up toy) until it dies and can do nothing.



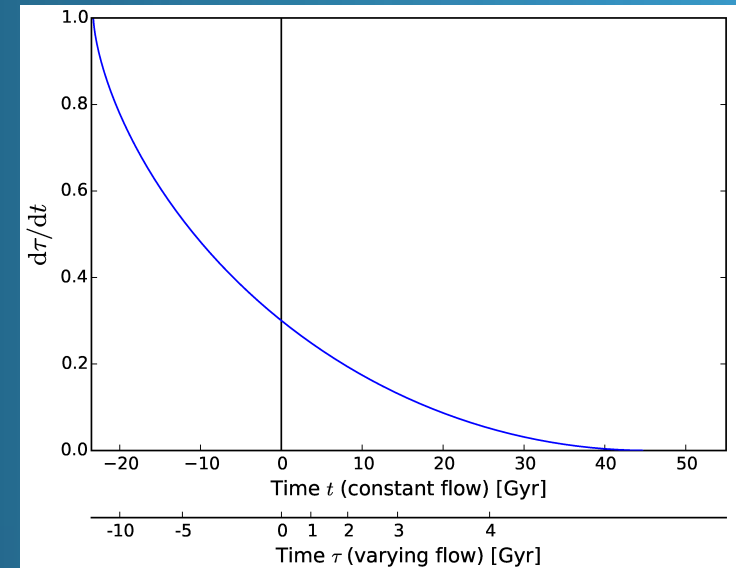
*i.e. all living things age and die, they don't get younger.*



*Mechanical things tend to wear out and break down.*

## COSMOLOGY AND CREATION

The assumed conclusion, given our current understanding of entropy, is that, if our universe, or a multiverse, always existed, they would have completely run-down and today would be dead (incapable of doing anything).



And so we one would rationally state from that conclusion that, being that our universe is NOT DEAD (as we are a part of it), we can see that with evidence from the known laws of thermodynamics (entropy) our universe does indeed *have a beginning*.

# CREATION & SCIENCE:

WHY CAN'T WE BE FRIENDS?

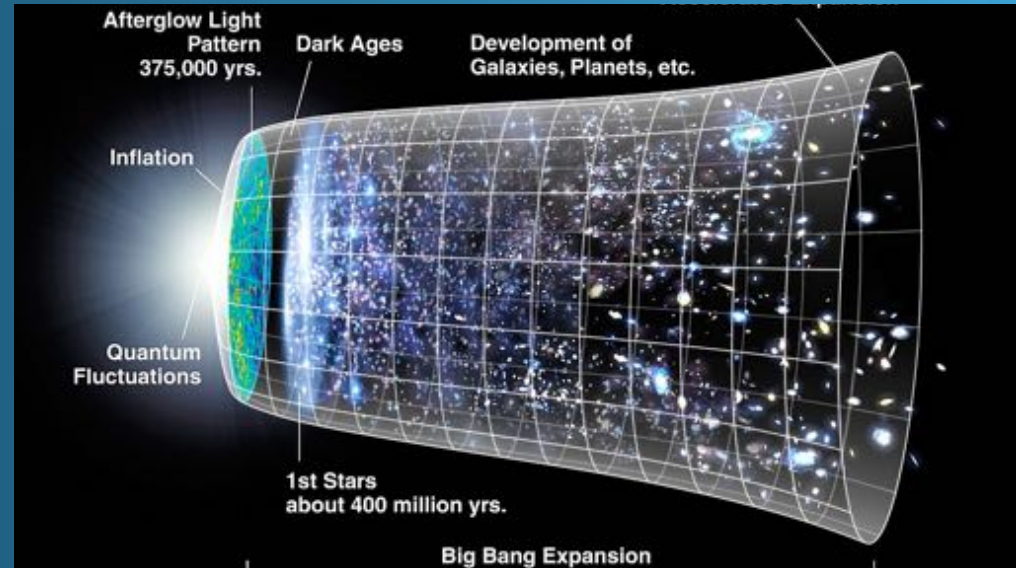




## COSMOLOGY AND CREATION

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We see then that the Biblical account of Creation in Genesis is meant to teach us about God's creation of the universe "out of nothing" with "order and design", and man as the pinnacle of that creation made in God's image and likeness. It does not attempt to give us a *timeline* or *exact description* of the events of creation.



The Big Bang Theory does not attempt to explain how the universe was created, or even that it was. It only sets out to show how the universe has expanded since its creation and how it has continued to expand, change, and evolve since that time. Any supposed conflict between the two is a result of misunderstanding what each (Biblical Creation and the Big Bang Theory) actually are attempting to teach us.





Science and Religion once again are not in conflict, but are complementary to one another and both help in our understanding of the universe.