



# DEFENDING THEISM

Arguments for God's Existence



# SESSION 2

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OPENING PRAYER

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EMPIRICAL BACKGROUND OF THE  
COSMOLOGICAL ARGUMENT

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THE ARGUMENT ITSELF

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STRENGTHS/WEAKNESSES OF THE  
ARGUMENT

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ANSWERING COMMON OBJECTIONS

# PRAYER BEFORE STUDY

**Ineffable Creator, Who, from the treasures of Your wisdom, have established three hierarchies of angels, have arrayed them in marvelous order above the fiery heavens, and have marshaled the regions of the universe with such artful skill, You are proclaimed the true font of light and wisdom, and the primal origin raised high beyond all things.**

**Pour forth a ray of Your brightness into the darkened places of my mind; disperse from my soul the twofold darkness into which I was born: sin and ignorance.**

**You make eloquent the tongues of infants; refine my speech and pour forth upon my lips**

**The goodness of Your blessing. Grant to me keenness of mind, capacity to remember, skill in learning, subtlety to interpret, and eloquence in speech.**

**May You guide the beginning of my work, direct its progress, and bring it to completion.**

**You Who are true God and true Man, who live and reign, world without end.  
Amen.**



EMPIRICAL  
BACKGROUND OF  
THE  
COSMOLOGICAL  
ARGUMENT

Defending Theism

# IN THE EARLY 20<sup>TH</sup> CENTURY...

...the scientific consensus was:

1. The universe itself is eternal
2. The universe is stable and unchanging

Christians disputed this on theological, not empirical grounds.

# BUT SEVERAL THINGS STARTED TO CHANGE...

EINSTEIN'S  
THEORY OF  
RELATIVITY

In 1917, Einstein introduced a constant coefficient (the cosmological constant) into his field equations of general relativity to account for the effect of gravity and maintain a "static universe"

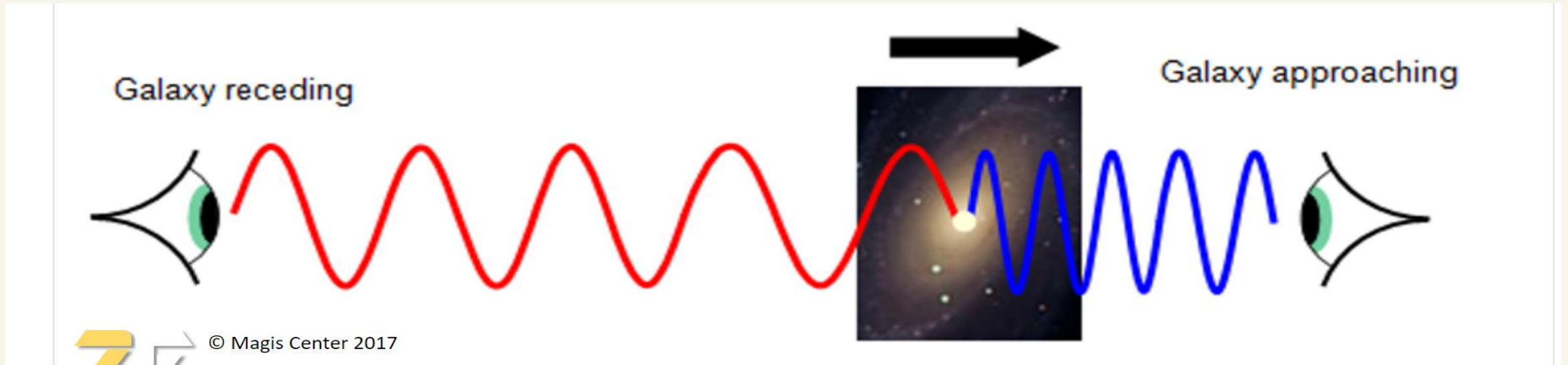
CLARITY ON THE SIZE  
OF THE UNIVERSE

Measurements begin to show definitive proof that observable cloud of "dust" are actually themselves distant galaxies millions of light years away.

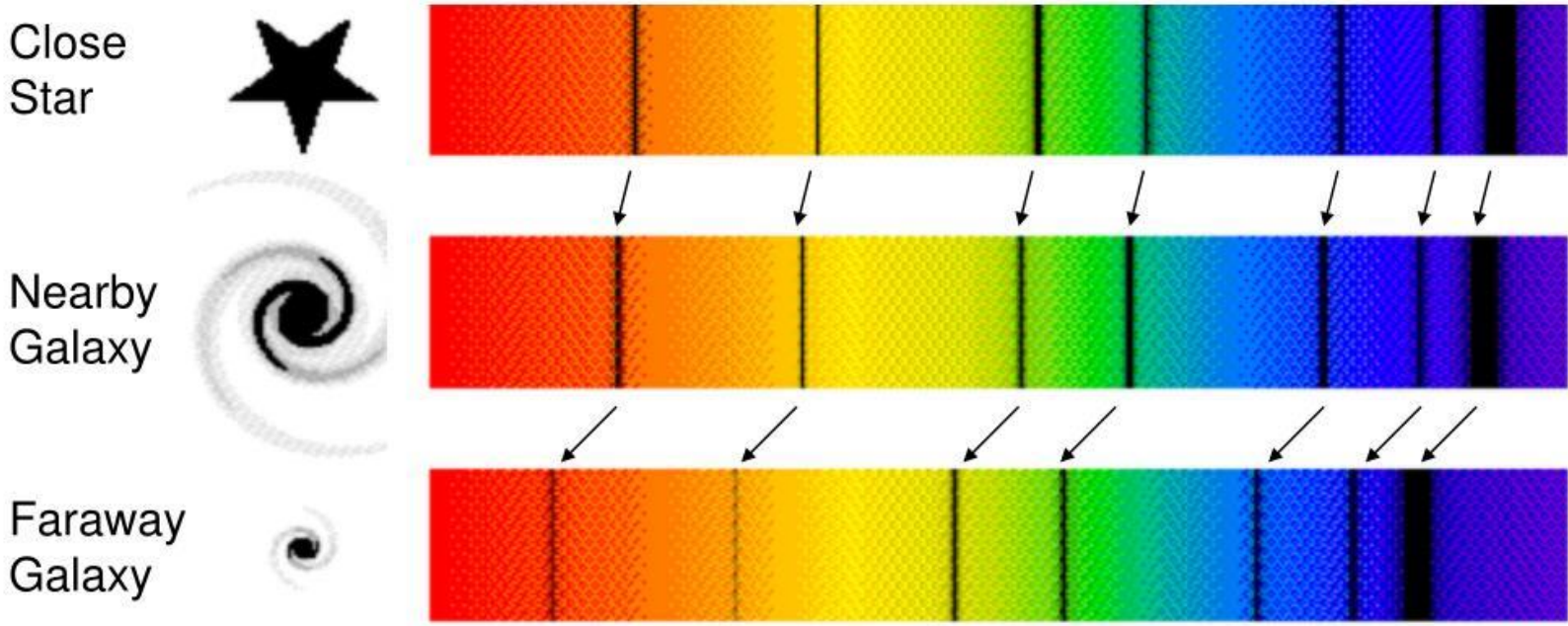
DISTANT GALAXIES  
ARE "RED-SHIFTED"

Vesto Slipher and Edwin Hubble note the Red-shift of distant galaxies show that the degree of red-shift is proportional to the distance of the galaxy from earth

# WHAT IS RED-SHIFT?



# What We See



The bigger the shift, the faster the light source is moving.





## FR. GEORGE LEMAITRE

In a 1927 article, he theorized for the first time that Einstein's general theory of relativity could be best explained by an expanding universe.

The evidence of red-shift in distant galaxies offered additional supporting evidence.

He is called the Father of the "Big-Bang Theory"

# BE CAREFUL NOT TO MISUNDERSTAND WHAT IS MEANT BY AN EXPANDING UNIVERSE!

Fr. Lemaitre theorized that galaxies were not moving through fixed 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 as it is inflated.



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# THIS THEORY WAS NOT INITIALLY WIDELY ACCEPTED

Astronomer Fred Hoyle famously opposed it even until his death in 2001.

Einstein was skeptical at first.

Only accepting it in 1933 during a visit to California (where Fr. Lemaitre was giving a lecture. He apparently applauded a lecture by Lemaitre and said:

“This is the most beautiful and satisfactory explanation of creation to which I have ever listened”

# IMPLICATION OF THE THEORY

By calculating back the expansion of the universe “in reverse,” the theory of an eternal universe was essentially overthrown.

The universe began with an event some 13.8 billion years ago.



# OTHER EVIDENCE OF A NON-ETERNAL UNIVERSE

## OLBER'S PARADOX

In an infinite universe, given infinite time, the night sky should be completely illuminated and bright.

## SECOND LAW OF THERMODYNAMICS

In any closed system, energy will tend to evenly distribute until it reaches an equilibrium. There would be no more "clusters" of energy as we observe in the universe, but rather, "heat death." Given infinite time, this should have already occurred.

## COSMIC MICROWAVE BACKGROUND

In 1964, Arno Penzias and Robert Wilson were two researchers at Bell Labs in Holmdel, NJ used a powerful receiver for radio astronomy observations. They detected microwave radiation in every direction from the initial emergence of light.

# MORE IMPLICATIONS OF THE THEORY (STANDARD MODEL)

From a singularity (a point without length, width, depth), the following emerge in a single instant:

- space
- time
- all the matter/energy in the entire universe

# THE ARGUMENT ITSELF

Defending Theism

# THE KALAM COSMOLOGICAL ARGUMENT

Premise 1: Whatever **begins** to exist must have a cause.

Premise 2: The universe began to exist.

Conclusion: The universe has a cause.



# THE KALAM COSMOLOGICAL ARGUMENT (CONT'D 2)

Conclusion: The universe has a cause.

We can deduce that this cause must be:

- timeless
- spaceless
- immaterial
- extremely powerful

# THE KALAM COSMOLOGICAL ARGUMENT (CONT'D 3)

Our candidates for something timeless, spaceless, and immaterial are:

1. Numbers
2. Minds/Intelligences

But numbers can't DO anything. Therefore, the cause must be a mind—in other words, a personal being who is

## THE KALAM COSMOLOGICAL ARGUMENT (CONT'D 4)

But numbers can't DO anything. Therefore, the cause must be a mind/person.

In other words, we are left concluding that the cause of the universe is a personal being who is timeless, spaceless, immaterial, and extremely powerful.

This is what we mean when we say GOD.

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# STRENGTHS AND WEAKNESS

Defending Theism

# WHAT ARE THE STRENGTHS OF THE ARGUMENT?

1. Easy to memorize and lay out.
2. Is consistent with the best of modern cosmology (but this is also a weakness)
3. Often forces those infected by "scientism" to appeal beyond science in order to avoid the conclusion.

# WHICH PREMISE IS WEAKEST?

Premise 1: Whatever **begins** to exist must have a cause.

OR

Premise 2: The universe began to exist.

# CAN WE STRENGTHEN PREMISE 2 WITH A PHILOSOPHICAL ARGUMENT?

An eternal universe means that there were an infinite number of past events.

But it is impossible to traverse an infinite number of past event in order to reach the present moment.

So therefore, an eternal past time is contradictory.

# ANSWERING COMMON OBJECTIONS

Defending Theism



# COMMON OBJECTION #1

What caused God?

## COMMON OBJECTION #2

Maybe there was some pre-existing, eternal matter/time/space (however infinitesimally small) prior to the Big Bang.

# COMMON OBJECTION #3

Perhaps our universe is more complex or is not the only one.

Maybe it:

- exists within a "multiverse"
- or, is the latest iteration of an expanding and contracting universe.
- Has more dimensions that we can't verify

# BVG PROOF

In 2003, physicists Arvind Borde, Alexander Vilenkin, and Alan Guth published what is now known as the BVG theorem.

They demonstrated two things:

1. Every universe which has, on average over its past history, been in a state of cosmic expansion cannot be eternal in the past.
2. Every possible universe must be, in average, in a state of cosmic expansion.



## BVG PROOF

"It is said that an argument is what convinces reasonable men and a proof is what it takes to convince even an unreasonable man. With the proof now in place, cosmologists can no longer hide behind the possibility of a past-eternal universe. There is no escape: they have to face the problem of a cosmic beginning."  
- Alexander Vilenkin

# OCCAM'S RAZOR

“The problem-solving principle that recommends searching for explanations constructed with the smallest possible set of elements.”

This is the standard for normal rational thinking.