



**Credible Catholic**

# **7C SEVEN ESSENTIALS**

## **PRESENTATION 2**

### **STUDENT WORKBOOK**

**SCIENTIFIC EVIDENCE OF GOD'S EXISTENCE**

*Age 12+ through Adult Version*



From content by:

**Fr. Robert J. Spitzer, S. J., Ph.D.**

Adapted by: Claude R. LeBlanc, M.A.

# Welcome to CREDIBLE CATHOLIC!

**WHAT IS THE PROBLEM?** It is unbelief and skepticism. In our culture, derision of religion, God, the soul, Jesus, and the prospect of finding spiritual meaning in suffering, are not only tolerated but preached and sometimes even celebrated. Many are already infected by the faulty messages which are delivered in four popular, but inaccurate, secular myths. These myths, in one form or another, are as follows:

- Myth 1:** Science and faith are incompatible, and since science is true, it has replaced religion.
- Myth 2:** Human beings are like every other animal—merely a complex of atoms and molecules. We have no soul, no eternal destiny, and no transcendent nature. When we die, we die.
- Myth 3:** There is no explanation for why an all-loving God would allow suffering. Therefore, suffering is fundamentally negative and a loving God probably does not exist.
- Myth 4:** There is no evidence for Jesus as an historical figure, and therefore his resurrection or divinity. If Jesus did exist, he was just an interesting prophet, but not a Savior or the Son of God.

The 2016 Pew Research Center’s Religious Landscape Study indicates that over 40% of millennials have abandoned their faith to unbelief because these four challenges have not been adequately addressed. Unless we specifically and effectively address these challenges to faith, the percentage will continue to grow. *What can be done?*

**OUR SOLUTION:** *Credible Catholic*, a Magis Center curriculum correlated to the *Catechism of the Catholic Church*, was specifically created to address these challenging myths.

## TABLE OF CONTENTS

**Presentation 2: SCIENTIFIC EVIDENCE OF GOD’S EXISTENCE**

<a href="#">Presentation Notes</a> .....	4
<a href="#">Activities Handout</a> .....	17

# **CREDIBLE CATHOLIC 7 ESSENTIALS**

## **PRESENTATION 2 WORKBOOK**

### **SCIENTIFIC EVIDENCE OF GOD'S EXISTENCE**

*Age 12+ Through Adult Version*

From content by:

**Fr. Robert J. Spitzer, S. J., Ph.D.**

**Adapted by Claude R. LeBlanc, M.A.**

**Magis Center**

13280 Chapman Ave.

Christ Cathedral Tower of Hope, 9<sup>th</sup> Floor

Garden Grove, CA 92840

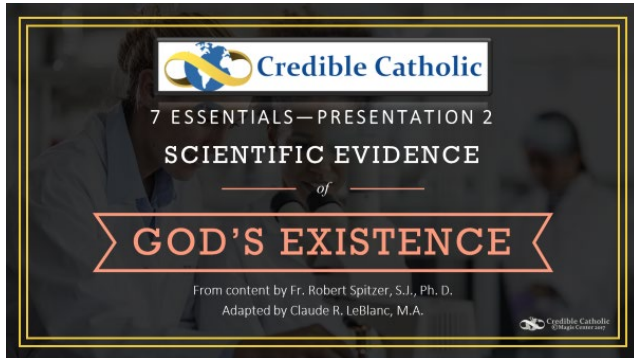
©Magis Center 2017



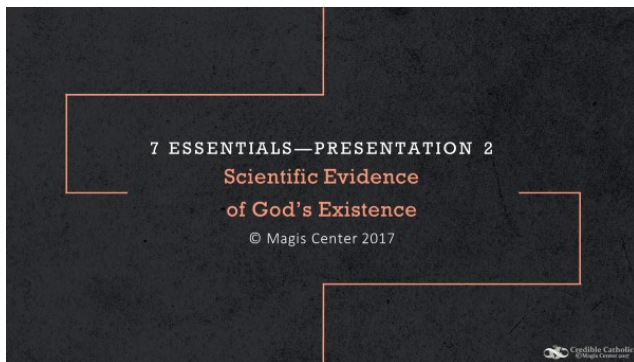
## CC 7E Presentation 2: *Scientific Evidence of God's Existence*

[Table of Contents](#)

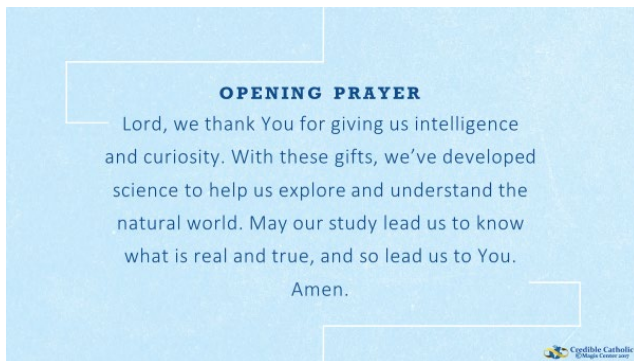
### PRESENTATION NOTES



SLIDE 1—TITLE SLIDE



SLIDE 2—COPYRIGHT SLIDE



SLIDE 3—OPENING PRAYER

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



SLIDE 4—LET'S DISCUSS



**SLIDE 5:** We live in an age of modern scientific discoveries. This has led many people to believe that we don't need the Church to help us understand the world around us. They believe that faith is not necessary nowadays; faith is just an emotional choice. Some believe there is no possible evidence for God's existence, so belief in God only comes from faith; a feeling, and not from any real evidence.



**SLIDE 6:** *How do we see faith today?* Let's see an example from the movies. In "*Indiana Jones and the Last Crusade*" Jones has to decide whether or not to have faith in his father's journal when it doesn't make sense to him. Watch as he questions whether faith is based on feeling or something else.

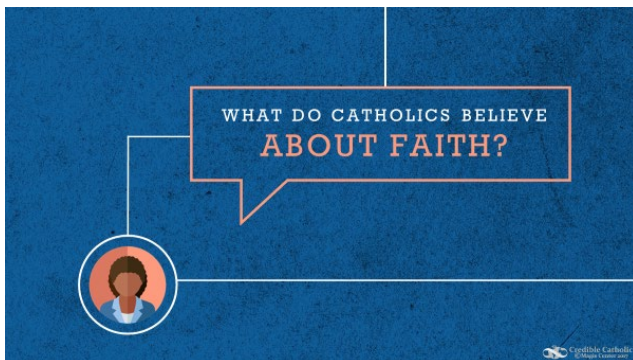
\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**SLIDE 7—VIDEO 2-1: “Blind” Leap of Faith scene from *Indiana Jones and the Last Crusade*.**



**SLIDE 8—LET'S DISCUSS**



**SLIDE 9:** Unlike Indiana Jones, Catholics understand that faith is *not* blind; faith is not just a feeling. We think that what we believe *should* make sense; faith *can* be reasonable.

**Notes:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

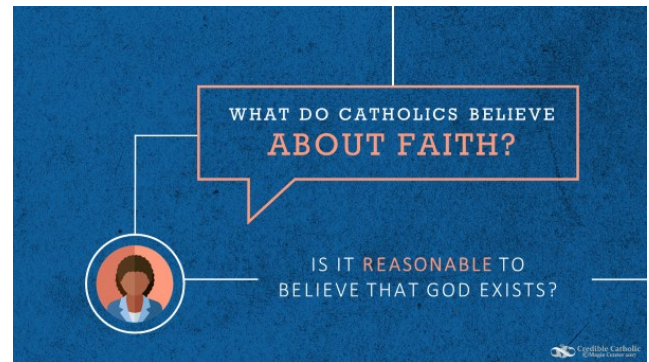
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

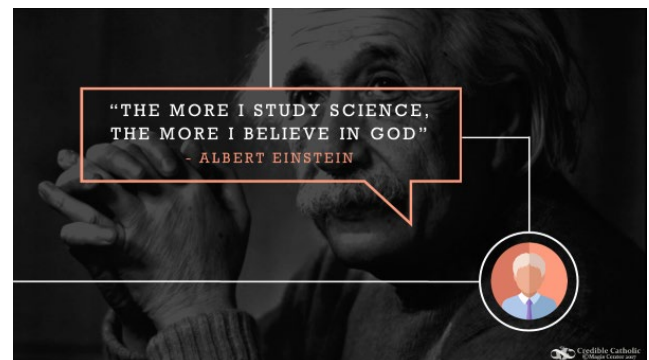
\_\_\_\_\_



**SLIDE 10:** So, the question is, “*Is it reasonable to believe that God exists?*” Let’s find out.

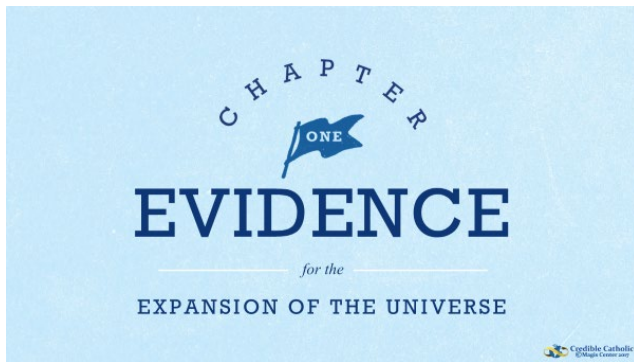


**SLIDE 11:** There are many reasons for believing that God exists. In this presentation we’re looking at the best scientific evidence. In the next presentation, we’ll look at proofs for the existence of God that come from philosophy. Science actually provides many kinds of evidence for the existence of God. *Did you know about 60 percent of scientists either believe in God or are open to God’s existence?* Let’s see why.

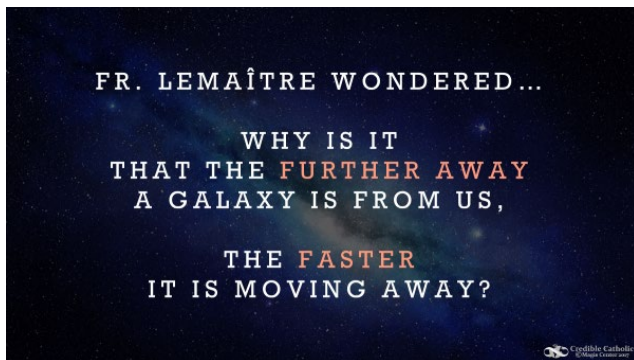


**SLIDE 12:** Albert Einstein, the Father of General Relativity, is probably the most famous scientist who ever lived. He once said: “*The more I study science, the more I believe in God.*” It was scientific evidence that led Einstein to believe in God. *What was that evidence, and why did it lead him to believe that God exists?*





**SLIDE 13—CHAPTER 1—EVIDENCE FOR THE EXPANSION OF THE UNIVERSE:** Before 1927 there was no evidence to indicate whether or not the universe had a beginning. But then, a Belgian priest and physicist, named Fr. Georges Lemaitre, proposed the Big Bang Theory.

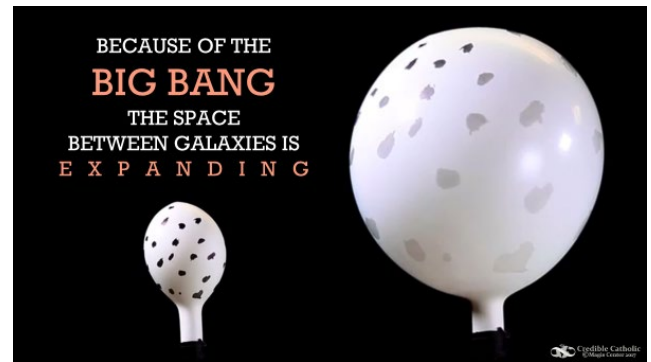


**SLIDE 14:** His theory answered a question that astronomers couldn't answer. The question was, "Why is it the further away a galaxy is from us, the faster it is moving away?"

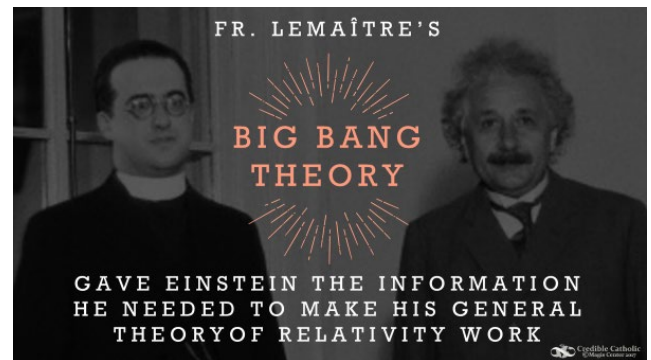


**SLIDE 15:** Fr. Lemaitre's Big Bang Theory states that galaxies are not moving through empty space. Instead, the space between them is stretching.

**Notes:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**SLIDE 16:** Imagine a polka-dotted balloon. As you inflate the balloon, the space between the dots will stretch and the dots will move further apart. Thanks to the Big Bang, the space between galaxies is expanding just like the space between the dots on the balloon.



**SLIDE 17:** Fr. Lemaitre's calculations gave Einstein the information he needed for his Theory of General Relativity to work. Eventually, this information also led Einstein to accept that the universe had a beginning. Let's see how.

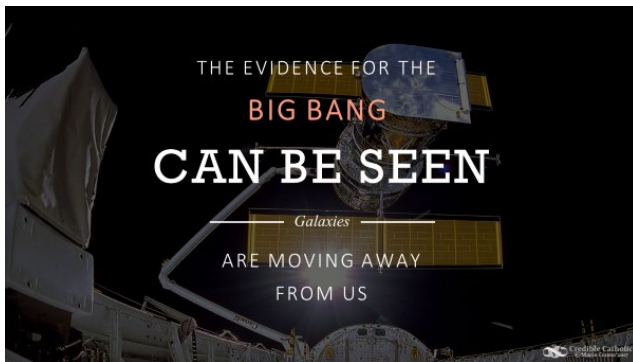


**SLIDE 18—ACTIVITY 1: Big Bang Rubber Bands**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**SLIDE 19:** By looking at the rate the universe is expanding, scientists have recently calculated backwards to figure out when the universe began—kind of like releasing the tension on a rubber band, or letting the air out of a balloon. The calculations determined that the universe is about 13.8 billion years old.



**SLIDE 20:** Over the years, scientists have discovered several different kinds of evidence that confirm the Big Bang. The first discovery came in 1929. An astronomer named Edwin Hubble observed that the light coming from distant galaxies is stretched-out, or “red-shifted”, more than the light coming from closer ones. This means the distant galaxies are moving away from us more quickly.



**SLIDE 21:** Let's let Stephen Hawking explain.



**SLIDE 22—VIDEO 2-2:** Clip from Stephen Hawking's “*The Expanding Universe*”



**SLIDE 23:** A second kind of evidence for the Big Bang was discovered in 1965. Arno Penzias and Robert Wilson noticed a strange hiss. The hiss was radiating in nearly equal amounts from everywhere in the universe they scanned. They eventually realized the hiss could only be caused by an incredible burst of energy coming from a single place at the beginning of time. This hiss was, in fact, heat from the Big Bang; something called *Cosmic Microwave Background Radiation*, which their instruments had picked up as a hiss.



**SLIDE 24:** Now, listen carefully to the Big Bang.

**Notes:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_





SLIDE 25—VIDEO 2-3: Hearing the Big Bang.



**SLIDE 26:** There's a third kind of evidence for the Big Bang. It's found in the very slight variation in the amount of matter spread across the universe very early in its history. The most recent evidence of this was collected by the Planck Space Observatory in 2013.



**SLIDE 27:** Let's watch how its image was made.

Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

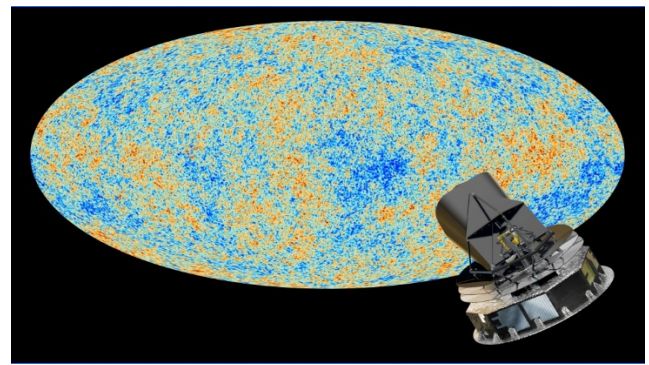
\_\_\_\_\_

\_\_\_\_\_

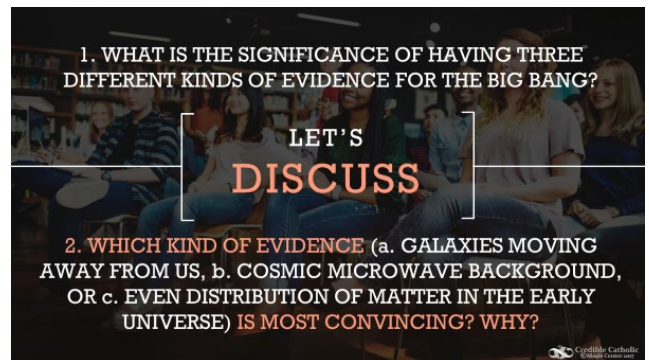
\_\_\_\_\_

\_\_\_\_\_

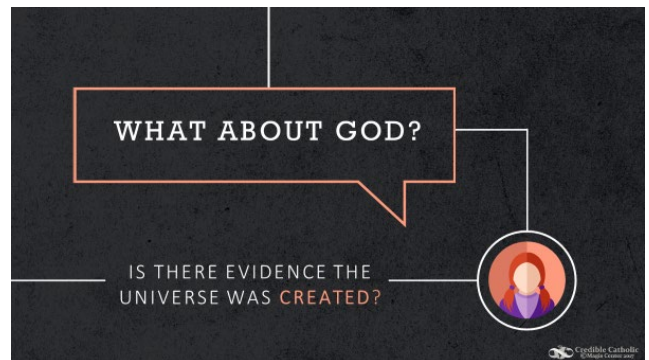
\_\_\_\_\_



SLIDE 28—VIDEO 2-4: Planck's View of the Universe.



SLIDE 29—LET'S DISCUSS



**SLIDE 30:** So far, we've given evidence for the Big Bang, but, *what about God?* *Is there any evidence that the universe was created?* There is, and we'll look at some in a minute, but the Big Bang is only one step in showing that the universe needs a Creator. While the Big Bang is evidence for the EXPANSION of the universe, it only *suggests* the universe had a BEGINNING and requires a Creator.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

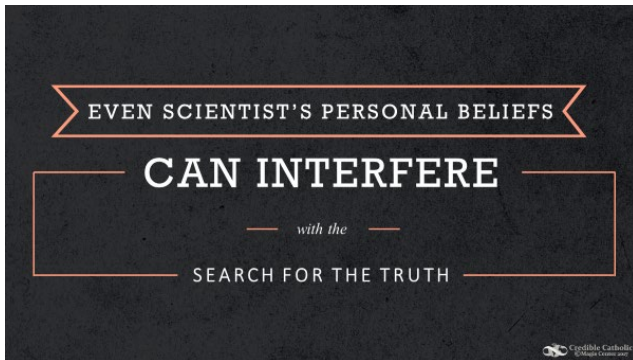
\_\_\_\_\_

\_\_\_\_\_

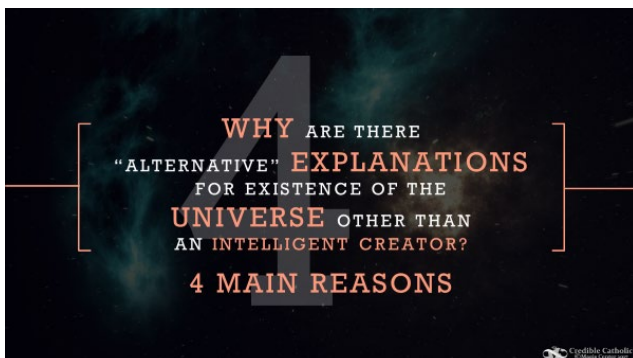




**SLIDE 31:** Before we get to evidence for God, let's look at some of the reasons given for the universe *not* having a beginning.

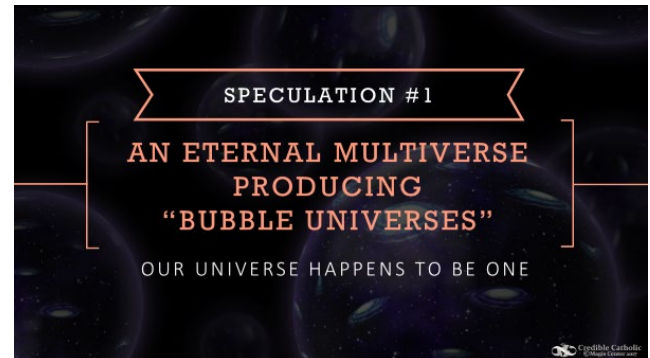


**SLIDE 32:** Keep in mind, that, being human, scientists can sometimes let their personal beliefs about God, religion and science interfere with their search for truth. Even Einstein altered his General Theory of Relativity to keep the universe from needing a beginning. He didn't alter it based on any evidence, but because he personally assumed that the universe always existed. However, once he saw Fr. Lemaitre's evidence for the Big Bang, he changed his theory. Giving up his personal beliefs in the face of the truth is one of the reasons Einstein is considered a great scientist. Now, let's look at the most common reasons given for the universe "not needing" a Creator.



**SLIDE 33:** There are four main "reasons" given for

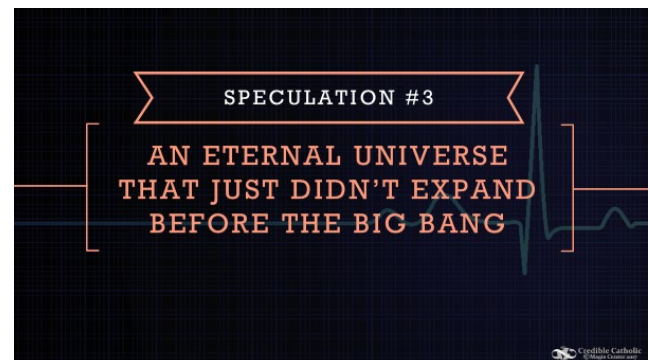
how the universe could exist without being created. Basically, these involve looking for ways to explain how the universe didn't have a beginning at the Big Bang.



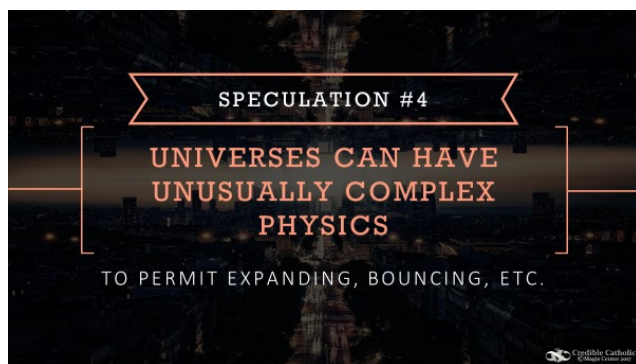
**SLIDE 34:** First, it has been speculated that there might be an eternal multiverse continually producing bubble universes. In this speculation, our universe is one of these bubble universes.



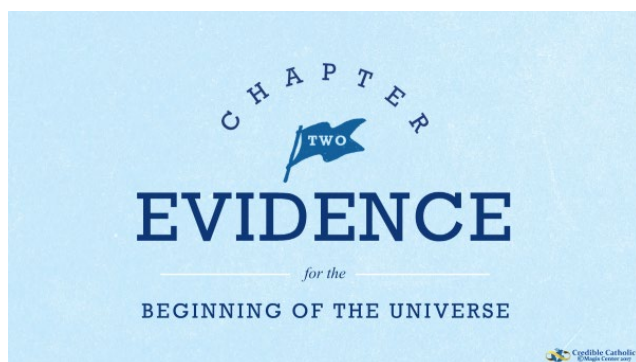
**SLIDE 35:** Another idea is that the universe is in a continual cycle of big bangs, where the universe expands, and big crunches, where the universe collapses. In this speculation, our universe happens to be in the expansion part of this ongoing cycle.



**SLIDE 36:** A third speculation is that the universe always existed but it just didn't expand before the Big Bang.



**SLIDE 37:** Finally, some hypothesize that universes can exist with unusually complex physics, such as having up to 11 dimensions that would permit all sorts of expanding and bouncing universes. None of these speculative universes, they claim, would require a Creator. *But, is that really true?*

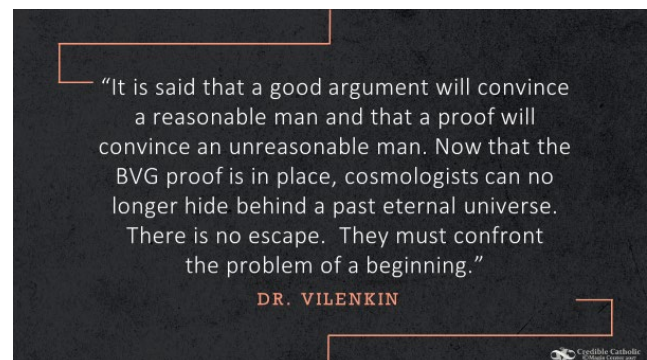


**SLIDE 38—CHAPTER TWO—EVIDENCE FOR THE BEGINNING OF THE UNIVERSE:** In 2003, three of the most prominent physicists in the world developed a proof together. The physicists were: Arvind Borde of UC Santa Barbara; Alexander Vilenkin of Tuft's University near Boston; and Alan Guth of MIT. Their proof demonstrated that *any* universe that is expanding HAS TO HAVE A BEGINNING.

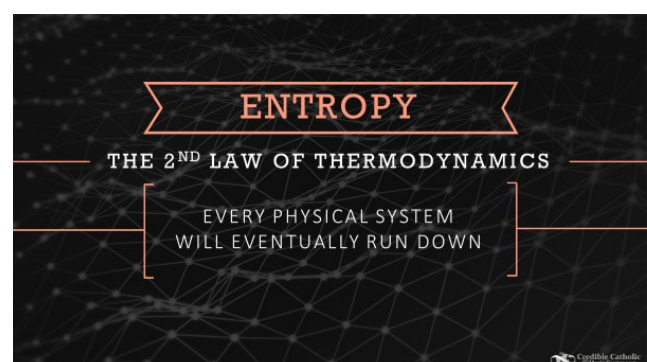


**SLIDE 39:** This proof, called the *BVG Proof* for short, shows that our universe, and any universe we can imagine, would need to be expanding at a rate greater than zero, and therefore, would need to

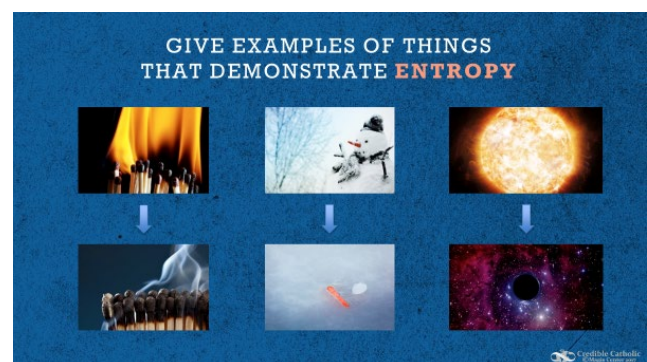
have a beginning. That goes for multiverses, bouncing universes, 11-dimension string-theory universes, you name it. Here's how Dr. Vilenkin explained it.



**SLIDE 40—DR. VILENKIN QUOTE**



**SLIDE 41:** A second kind of evidence for our universe having a beginning is *entropy*. It's also known as the 2<sup>nd</sup> Law of Thermodynamics. Entropy is one of the most fundamental laws of physics. Most physicists, including Einstein, believe it can never be disproved.



**SLIDE 42:** Entropy means that every physical system, including our universe or any potential multiverse, will eventually run-down like a wind-up toy until it can do nothing.

Notes: \_\_\_\_\_

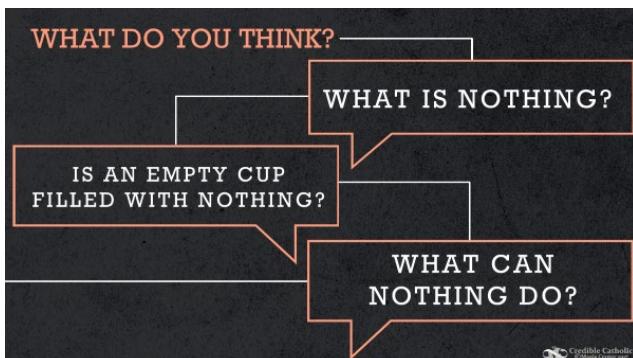




**SLIDE 43:** Because of entropy, if our universe, or any other kind of universe, *always existed*, it would have completely run-out of usable energy by now and be unable to do anything. Our universe, though, is still full of usable energy, so it must have existed for a limited amount of time. Based on this evidence from entropy, plus the evidence from the BVG proof, it seems clear that any universe or multiverse must have a beginning.



**SLIDE 44:** We've seen that the universe is *expanding* (from the Big Bang), and we've seen that it must have a *beginning* (from the BVG Proof and from entropy). Now we must ask: "What, or Who, caused the universe?" Cosmologists have determined that time, space, matter, and energy all had their beginning with the universe. Nothing physical existed before the Big Bang. But, *what is "nothing"?*



**SLIDE 45—WHAT DO YOU THINK?**



**SLIDE 46:** Anytime scientists have tried to explain how the universe came from nothing, their "nothing" always turns into "something." Even physicist Stephen Hawking made this mistake. He wrote that the universe could create itself from nothing because of the Law of Gravity. But, the Law of Gravity is actually something; something that did not exist before the Big Bang.

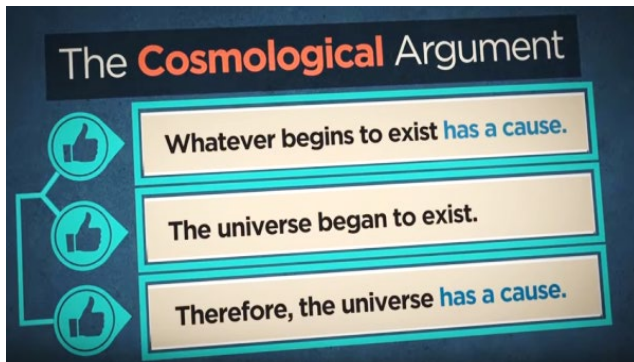


**SLIDE 47:** What can we conclude from the evidence from the Big Bang, the BVG Proof, and entropy? First, *it is very likely that our universe, and any other possible universe, had a beginning.* And second, something can't come from nothing, because nothing can only do nothing. So, *the universe came from something outside of time, space, matter and energy.*

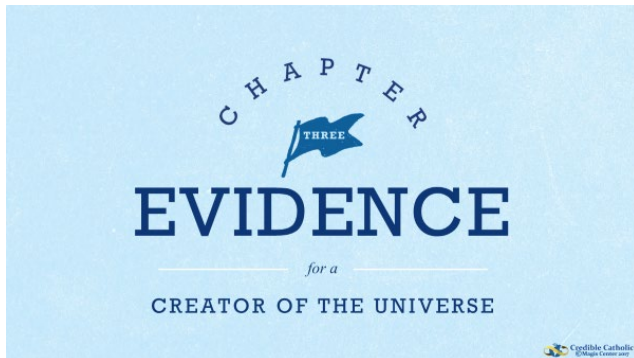


**SLIDE 48:** This brings us to something like God, as the following video explains.

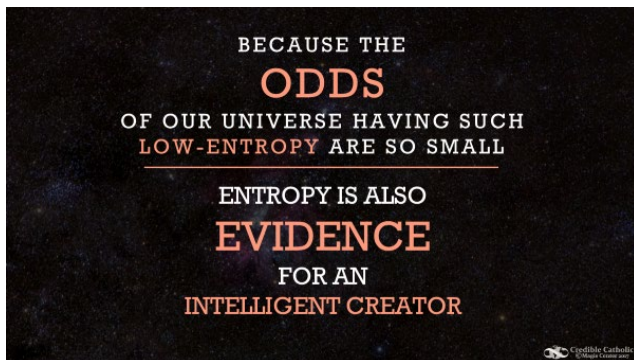




**SLIDE 49—VIDEO 2-5: The Kalam Cosmological Argument.**

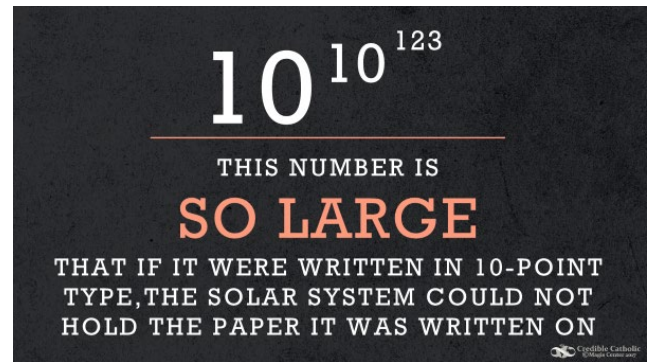


**SLIDE 50—CHAPTER 3—EVIDENCE FOR A CREATOR OF THE UNIVERSE:** We just saw that entropy is evidence for the beginning of the universe, but it also happens to be evidence that the universe needed an intelligent Creator. *Why?* Because of how *unbelievably precise* it had to be.



**SLIDE 51:** If entropy had been just slightly higher at the Big Bang, the universe would have been “almost dead” from the start, unable to sustain any kind of life. *What are the odds of that?* Physicist Roger Penrose calculated the odds of our universe having the very low entropy it does as 1 in  $10^{10^{123}}$ . *What does that number mean?*

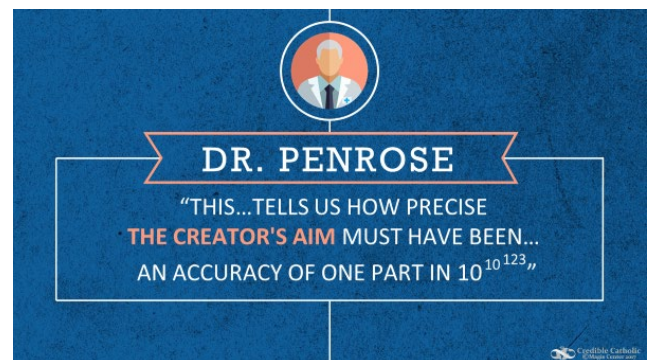
**Notes:** \_\_\_\_\_



**SLIDE 52:** Since  $10^{10}$  is 10 billion, then  $10^{10^{123}}$  is 10 billion multiplied by itself 123 times. This number is so large, that if every zero in it were printed in 10-point type, our solar system could not hold the paper it was printed on!



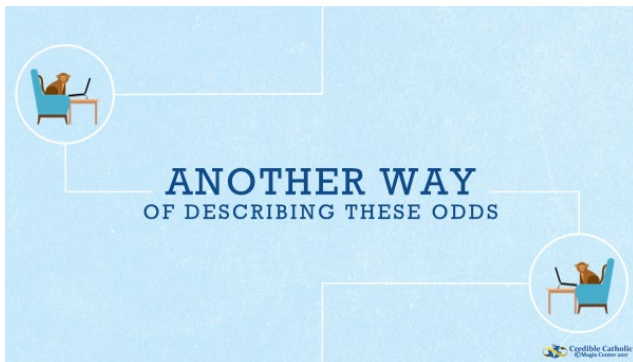
**SLIDE 53—LET’S DISCUSS:** In other words, the odds of our universe having the very low entropy it does, by pure chance, are so small it would only happen one time out of that astronomically large number of universes!



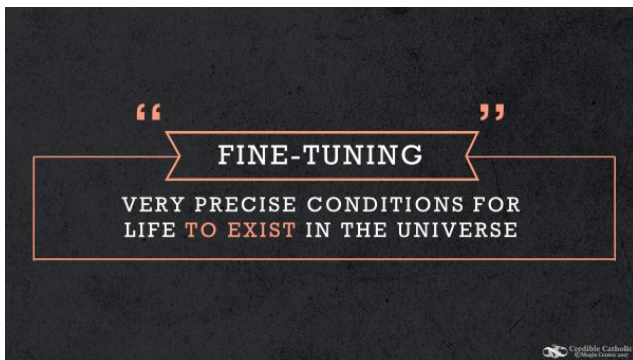
**SLIDE 54:** Of course, it *could* happen by pure chance, but based on those odds, Dr. Penrose doesn’t think it *would*. He said: “*This...tells us how **precise** the Creator's aim must have been...an accuracy of one part in  $10^{10^{123}}$ .*”

\_\_\_\_\_





**SLIDE 55:** Another way of describing the odds of our universe having the very low entropy it does is comparing it to the odds of a monkey typing the complete works of Shakespeare by randomly typing on the keys in a single try. In other words, don't count on it!



**SLIDE 56:** Low entropy at the beginning of the universe is just one kind of evidence for what physicists call the “fine-tuning” of the universe *for life*.



## SLIDE 57—LET'S DISCUSS

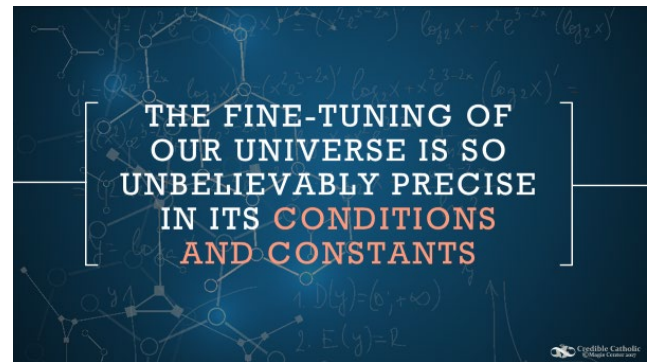
**Notes:** \_\_\_\_\_

\_\_\_\_\_

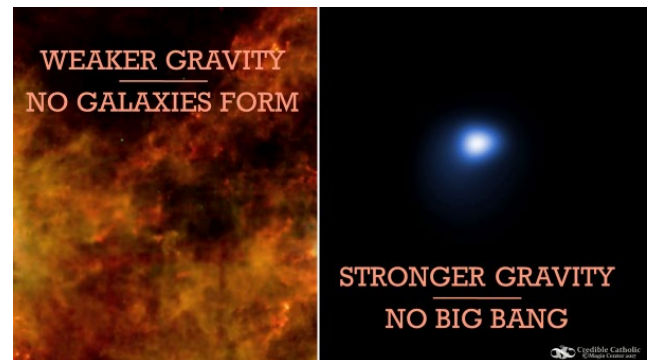
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

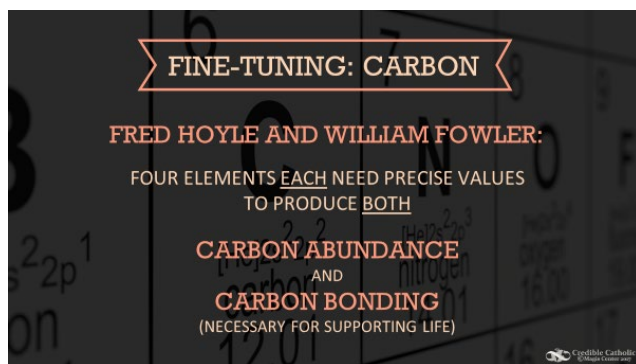


**SLIDE 58:** Some of these fine-tuned conditions and constants of the universe are so unbelievably precise that a change of less than a millionth of 1% would be disastrous for life. Let's review a couple of them.



**SLIDE 59:** The “pull” of gravity, or what’s called the Gravitational Constant, determines how strongly physical bodies are attracted to one another. If it were slightly weaker, then galaxies wouldn’t have formed. But, if it were slightly stronger, there would have been no Big Bang.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper has a slight shadow on the right side, suggesting it's resting on a surface.



**SLIDE 60:** Here's another example. The element carbon is an essential building block of life. Fred Hoyle and William Fowler discovered the exceedingly high improbability of four chemical elements, all having the precise values needed, to allow for both carbon abundance and carbon bonding, which is necessary for life. In other words, change the values slightly on just one of these elements, and carbon either become much more scarce in the universe or it becomes incapable of supporting life.



**SLIDE 61:** In the words of Fred Hoyle: "A common sense interpretation of the facts suggests that a super-intellect has monkeyed with physics, as well as with chemistry and biology, and that there are no blind forces worth speaking about in nature."



**SLIDE 62:** To illustrate his point, Hoyle went on to say, "Imagine a junkyard contains all the bits

and pieces of a Boeing 747, dismembered and in disarray. A whirlwind happens to blow through the yard. What is the chance that a fully assembled 747, ready to fly, will be found standing there?"



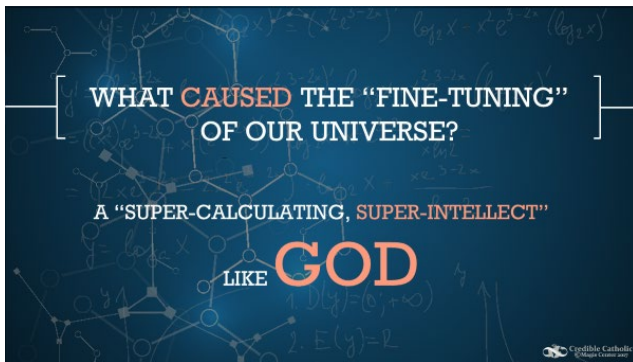
**SLIDE 63:** Not everyone agrees. To avoid the need for a Creator to explain the "fine-tuning" of the universe, some physicists have resorted, once again, to a multiverse. They argue that if there are trillions and trillions of universes, each with different conditions, one of them is likely, by pure chance, to be suited for life, and we just happen to live in that one.



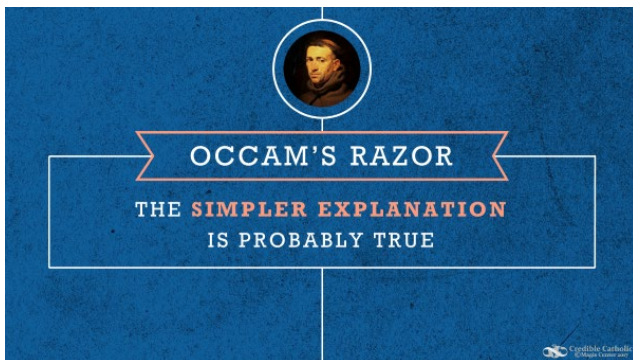
**SLIDE 64:** Well, remember how a multiverse was supposed to keep the universe from needing a beginning, but then the BVG Proof showed that even a multiverse itself would need a beginning? It's the same story with fine-tuning. It turns out that a multiverse would also require "fine-tuning" to prevent its "bubble universes" from interfering with one another, and making life impossible. So, a multiverse only moves the need for "fine-tuning" back one step. We'd have to ask "What caused the fine-tuning of the multiverse?"

**Notes:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_





**SLIDE 65:** And that brings us to our final point. *How do we answer the question of “What caused the “fine-tuning” of our universe? If not random chance, then what, or Who?* Many physicists—like Fred Hoyle—believe that only a “super-calculating, super-intellect,” like God, could cause the universe.



**SLIDE 66:** *Besides, isn't a single intelligent Creator much more likely than trillions and trillions of universes?* Science typically uses a philosophical principle known as Occam's Razor. It says that when faced with two possible explanations, the simpler of the two is most likely to be true.



**SLIDE 67:** Here's a short video summarizing the evidence we've presented.

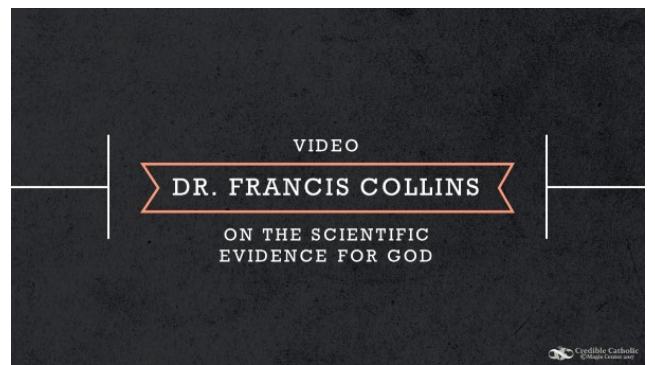
**Notes:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**SLIDE 68—VIDEO 2-6:** The Fine Tuning of the Universe.



**SLIDE 69:** When we add up the evidence for the Big Bang, the BVG Proof, entropy and the “fine-tuning” of the universe; they overwhelmingly imply that our universe was caused by an intelligent creative force beyond our physical reality; something, or someone, like God.



**SLIDE 70:** Watch one of the world's leading scientists, Francis Collins, explain how he reached this same conclusion.

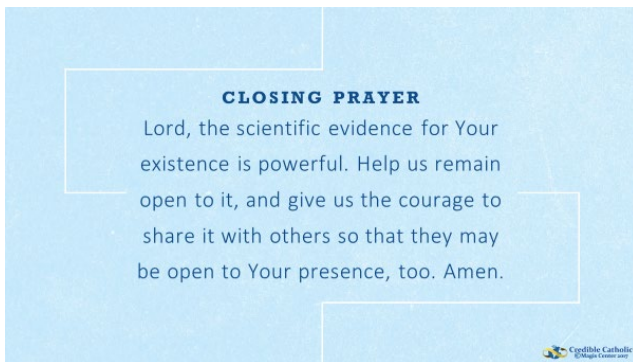
\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



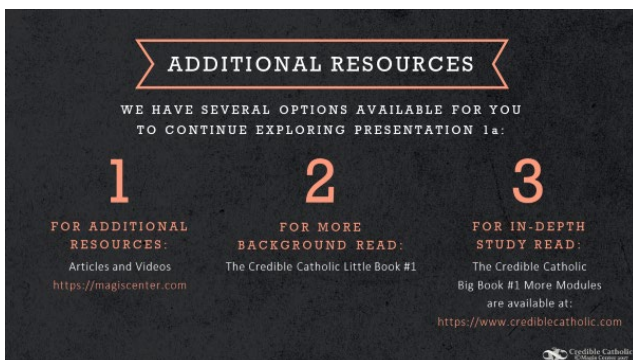
**SLIDE 71—VIDEO 2-7: Dr. Francis Collins on the Scientific Evidence for God.**



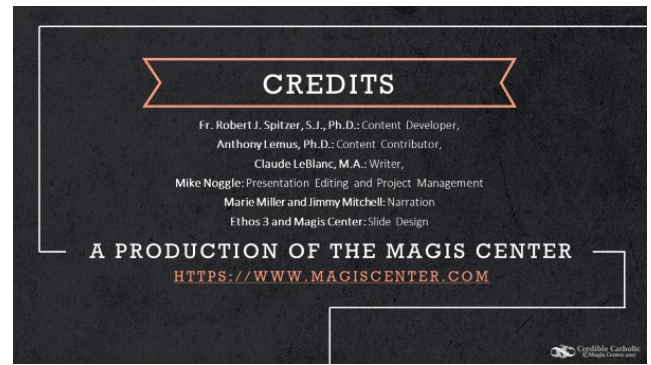
**SLIDE 72—ACTIVITY 2: *Why Would Anyone Not Believe That God Exists?***



## SLIDE 73—CLOSING PRAYER



## SLIDE 74—ADDITIONAL RESOURCES



## SLIDE 75—CREDITS

**Notes:**



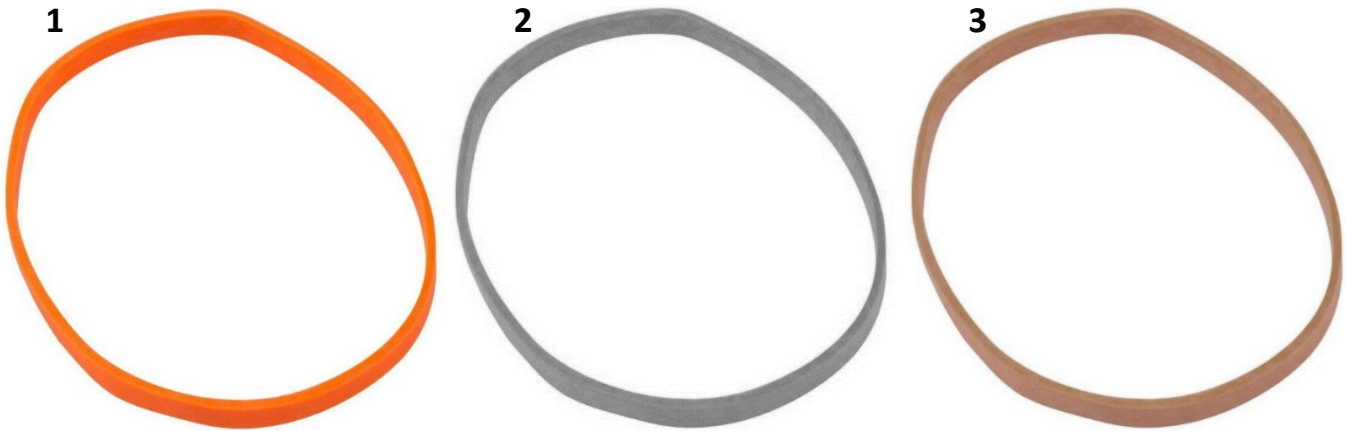
Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

[Table of Contents](#)

## CREDIBLE CATHOLIC—7 ESSENTIALS Presentation 2 **ACTIVITIES**

### *Scientific Evidence of God's Existence*

**ACTIVITY #1: *Big Bang Rubber Bands*:** Lay a cut rubber band (unstretched) next to the ruler. Draw dots at 0 inches, 1 inch, 2 inches and 3 inches. Hold one end at 0 inches and stretch the other end until the dot at 3 inches is at 6 inches. Answer the following questions (inside the rubber bands): **1: *What's different about the dots closer to one another from the dots farther away? Why?*** **2: *What happens when you release the tension?*** **3. *How do each of these relate to the universe?***



**ACTIVITY #2: *Why Would Anyone Think it is Unreasonable to Believe in God?***



Dr. Francis Collins, Director of the NIH and former lead in the Human Genome Project, believes that scientific evidence makes it reasonable to believe in God.

Answer these questions and be prepared to discuss them:

**1. *Why would anyone think it is unreasonable to believe in God or that the best scientific evidence doesn't point to God?***

**2. *Could it be just because people don't want to believe in God?***



## THE 7 ESSENTIAL PRESENTATIONS

**Essential 1—MEDICAL EVIDENCE OF A SOUL:** We show evidence, from **Near-Death Experiences** (NDEs) and **Terminal Lucidity** (a clarity of consciousness sometimes occurring shortly before death in persons with dementia, Alzheimer's, and irreversible brain damage) that consciousness is not dependent on physical bodies or brains, and therefore, that we have souls that survive bodily death.

**Essential 2—SCIENTIFIC EVIDENCE OF GOD'S EXISTENCE:** We give evidence from the **Big Bang**, the **BVG Proof** (that all expanding universes have to have a beginning), **entropy**, and the "**fine-tuning**" of the universe for life, that our universe requires an Intelligent Creator in order to exist.

**Essential 3—PHILOSOPHICAL PROOF OF GOD'S EXISTENCE:** We demonstrate, using reasoning, from **St. Thomas Aquinas**, **C. S. Lewis**, and others, the logical necessity for there being a Transcendent Creator of the universe.

**Essential 4—PROOF OF JESUS' RESURRECTION AND DIVINITY:** We describe evidence from the **Shroud of Turin**, the **Facecloth of Oviedo**, **Historical Documents** (biblical and non-biblical), and the work of **N. T. Wright**, that the Resurrection of Jesus is an historical fact, and that He is divine.

**Essential 5—WHY BE CATHOLIC?** We show that the Catholic Church is Christ's only authentic living authority, and give evidence of miracles (through the intercession of **Mary** and the **Saints**, and for the real presence of Christ in the **Eucharist**) that demonstrate God's work in the Church.

**Essential 6—TRUE HAPPINESS:** We explain the four kinds of happiness (coming from **pleasure**, **accomplishments**, **service of others**, and **a loving relationship with God**) and show why only the latter two can give us the pervasive, enduring, and deep happiness we truly desire and need.

**Essential 7—WHY WOULD AN ALL-LOVING GOD ALLOW SUFFERING?** We guide the learner to understand the **necessity**, **meaning**, and **benefits** of suffering, which are growing in the love of God, others, and ourselves, and attaining happiness for ourselves and others here, and with God for eternity in Heaven! Rev. 3-21-20