

God's Grand Design
Class #3
Is the earth a miracle?
Genesis 1
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The Rock Church

INTRODUCTION

Good evening everyone! My name is Josh Whitney. I am a pastor at the Rock Church. Welcome to our third **God's Grand Design class!** I am excited so many of you are taking this class. I have been studying this subject for 30 years and I am so excited to be teaching on it.

Driving home two weeks ago, I was brainstorming with Krista what topic I wanted to cover tonight. I had 3 major ideas and this is the one I decided was important before we leave Genesis chapter 1.

So this third class will also be based on Genesis chapter 1 and answering this question, **is the earth a miracle?** We have a lot of science and math tonight, so buckle up.

So let's start with prayer.

OVERVIEW

In this class, we are comparing two different views of origins.

When I say origins, I mean, where did everything come from?

View #1 – God created the heavens and the earth. (in 6 days, thousands of years ago)

And **View #2. The heavens and earth evolved, without God. (millions and billions of years ago)**

View #2 is the perspective you have probably heard your entire educational process.

When I say evolved, I mean the gradual development of something step by step, from simple to a more complex form.

Just so you know where I am coming from, I want to compare these two views in this class.

So I am explaining why we teach that the young earth creation perspective makes the most sense, biblically and scientifically.

MIRACLE

So let's get into it.

Is the earth a miracle?

First we need to define miracle. According to a dictionary. A **Miracle: an extraordinary event demonstrating God's intervention in the natural world.**

So is the existence of the earth and everything else a miracle?

Well, scientists once thought planets that could sustain life, like the earth, were NOT miraculous. They thought it was very common. Very easy. Planets that sustain life should be everywhere in the universe.

Let me teach you some history.

In 1966, **Carl Sagan** (a famous astronomer) said there were **2 necessary criteria for a planet to support life. 1. The right kind of star and 2, a planet the right distance from the star.** The right star and a planet the right distance and you have potential for life. How many planets is that?

A quick math tutorial, before we continue.

Let me teach you some really numbers.

One	1
Thousand	1,000
Million	1,000,000
Billion	1,000,000,000
Trillion	1,000,000,000,000
Quadrillion	1,000,000,000,000,000
Quintillion	1,000,000,000,000,000,000
Sextillion	1,000,000,000,000,000,000,000
Septillion	1,000,000,000,000,000,000,000,000
Octillion	1,000,000,000,000,000,000,000,000,000
Nonillion	1,000,000,000,000,000,000,000,000,000,000
Decillion	1,000,000,000,000,000,000,000,000,000,000,000

Astronomers estimate there **1 octillion planets in the universe.** 1 followed by 27 zeros.

Using Carl Sagan's criteria, they estimated there should have been about **1 septillion planets** capable of supporting life. 1 followed by 24 zeros. So they estimated 1 in thousand planets would have the right star and be the right distance. 1 septillion planets that could support life.

Aliens What great odds! Scientist were excited to go discover all of these planets that could support life. They should be everywhere. There were 10^{24} worlds that could sustain life. Certainly some of them would have something? Maybe it is not quite Star Wars, but there are 1 septillion planets. Surely something is happening on a lot of them.

So back in the 70s and 80s, scientists started searching for signs of extraterrestrial life. How did they do that? Radio waves.

SETI. Since the search started, millions of dollars have been spent listening to outer space. Mainly listening for radio waves. It was called the search for extraterrestrial intelligence. Or seti for short.

Why radio waves?

A quick radio tutorial, before we continue.

Radio was invented about 1901. And then TV in 1927. So since then radio and tv signals have been traveling out into space. And they just keep going.

I saw this story. **Our Radio Signals Have Now Reached 75 Star Systems That Can See Us Too.** We have been broadcasting for over 100 years.

So the search for radio signals led to hundreds of millions of dollars spent on radio telescopes listening to outer space. Listening for signals that would indicate coded intelligence. They built radio giant telescopes like this one in **Puerto Rico**. Listening to outer space for signs of intelligent life.

How many of you saw **Jodi foster's contact** movie? Don't. I will save your \$3.79 on prime video. This is what the dream was. Scientist will hear a signal and start listening to radio communication from another world. Maybe we start talking with the aliens and it changes the history of our planet. It would be the biggest news story ever!

Imagine listening to radio signals from an alien world, that would be crazy.

Well, decades have gone by. 40 years roughly. And hundreds of millions of dollars have been spent listening for signs of intelligent life out in the universe.

And what has this search yielded?

Zero, nada, zilch. This is that giant radio telescope in Puerto Rico. Funding ran out and it has fallen into disrepair.

In fact, the total lack of any signal from space has led to something called the Fermi paradox.

The Fermi paradox is commonly understood as asking why aliens have not visited Earth. This is kind of a modified SETI version.

1. Our current observations/methods are incomplete, and we simply have not detected them yet.

We just need more money and time.

2. It is the nature of intelligent life to destroy itself.

3. The initial assumption is incorrect and technologically advanced intelligent life is much rarer than we believe.

Again, this paradox developed because we have been listening for radio signals for 40 years and heard nothing. And given the 1 septillion planets out there, somebody somewhere should be transmitting something.

Again, life isn't a miracle according to this worldview. It is happening everywhere. A planet the right distance from the right kind of star. And boom, one septillion planets capable of sustaining life.

THE EARTH IS A MIRACLE

I would like to present a different view. The earth is a miracle. And we have a clear explanation for where the earth came from. We are going back to Genesis chapter 1. I want you to focus on a different word this time. It's the word, good. The earth is a miracle and I believe Genesis 1 makes that clear. This is a good, special, miraculous creative act of God.

Let's go back to Genesis 1. Look at the days of creation.

Genesis 1:4 And God saw that the light was good. And God separated the light from the darkness.

Genesis 1:10 God called the dry land Earth, and the waters that were gathered together he called Seas. And God saw that it was good.

Genesis 1:12 The earth brought forth vegetation, plants yielding seed according to their own kinds, and trees bearing fruit in which is their seed, each according to its kind. And God saw that it was good.

Genesis 1: 17 And God set them in the expanse of the heavens to give light on the earth, 18 to rule over the day and over the night, and to separate the light from the darkness. And God saw that it was good.

Genesis 1:21 So God created the great sea creatures and every living creature that moves, with which the waters swarm, according to their kinds, and every winged bird according to its kind. And God saw that it was good.

Genesis 1:25 And God made the beasts of the earth according to their kinds and the livestock according to their kinds, and everything that creeps on the ground according to its kind. And God saw that it was good.

Genesis 1:31 And God saw everything that he had made, and behold, it was very good. And there was evening and there was morning, the sixth day.

What was individually good over the days of creation, is now collectively good at the end of creation. No flaws, no omissions.

It is very clear here, God is doing something special in the creation of the heavens and earth. What is the Hebrew word used here for good?

Key Hebrew words from Genesis 1:1-2:3

Good (Gen. 1:4, 1:10, 1:12, 1:18, 1:21, 1:25, 1:31)

(7 times)

Towb: beautiful, pleasant, agreeable, good.

So very clearly as God created the earth, day by day, it was good. The creation of this planet was a special act by God. The planet was created to be agreeable or pleasant. God created this world to sustain life. It was a miracle. I will show that scientifically, in a minute. So the creation of our planet was a miracle by God Almighty!

In fact, you could say the creation of our planet was the greatest miracle ever.

And why did God make the earth like this? Why did God make the earth to sustain life?

Let's jump to the New Testament. The book of Acts. Paul and Barnabas were on a mission trip. They arrive in the town of Lystra. That is in modern day Turkey. Paul and Barnabas heal someone and the people start worshipping them. And then they said.

Acts 14:15 "Men, why are you doing these things? We also are men, of like nature with you, and we bring you good news, that you should turn from these vain things to a living God, who made the heaven and the earth and the sea and all that is in them. 16 In past generations he allowed all the nations to walk in their own ways. 17 Yet he did not leave himself without witness, for he did good by giving you rains from heaven and fruitful seasons, satisfying your hearts with food and gladness."

Notice that God made the heavens, the earth, the sea. And he gave people rain and fruitful seasons and food. Clearly, God created the earth to sustain life. That was his witness to us. And this passage also speaks of hydrologic cycle, seasons, and food producing planets. And God made all of that.

From Genesis 1 and Acts 14, we see that God made the earth to sustain life and it was very good.

BACK TO SCIENCE

So does the science support this? Is the existence of the earth a miracle?

What happened to Carl Sagan's 2 criteria for life? The earth is a miracle and I believe the science makes that abundantly clear. Was **Carl Sagan correct**? Two factors. The right star and the right distance from the star.

Well he was right and wrong. These two factors are critical. But there are many more.

Since 1966 as science has progressed, it has become clear there are many more factors necessary for a planet to support life.

Guess what the number is today?

I have been reading on this topic for 30 years now. As I have read, I have seen 50, 100, 150.

Now I see **200+ criteria** for a planet to support life

200+ criteria, of which every single one of which must be perfectly met for a planet to support life.

200 is a remarkable level of fine tuning needed for a planet to support life.

Let's read some quotes from some famous scientists. Very smart scientists. Astronomers, mathematicians, physicists. Not Christians. In fact, many unbelievers. They are working from an evolutionary, naturalistic worldview.

Peter Schenkel, may not be his photo, but a political scientist and author and skeptic said – **In light of new findings and insights, we should quietly admit that the early estimates may no longer be tenable.**

Talking about the fine tuning.

Fred Hoyle astronomer – **My atheism was greatly shaken by these developments.**

Paul Davies physicist – **Everyone agrees that the universe looks as if it was designed for life.**

Michio Kaku theoretical physicist - **"It's shocking to find how many of the familiar constants of the universe lie within a very narrow band that makes life possible. If a single one of these accidents were altered, stars would never form, the universe would fly apart, DNA would not exist, life as we know it would be impossible, Earth would flip over or freeze, and so on."**

Christopher Hitchens author journalist atheist. He died a few years ago. – **Without question the fine-tuning argument was the most powerful argument of the other side.**

That's the faith side. Let's watch him talk about this for a minute.

https://www.youtube.com/watch?v=YL3wwlh5KS0&ab_channel=GraspingTheNettle

Too easily unimpressed.

200 FACTORS

Well, let's look at all 200+ factors. What do you say? Just kidding. We will hit 10 briefly.

Carl Sagan was right. These 2 are very important.

Let's sample 10 of 200

1. The right kind of sun/star. There are a variety of stars. All kinds of sizes and energy types. Different energy waves and light that come off of them. Different levels of stability. Our sun is a yellow dwarf star. Which means there is a particular heat and brightness.

The type of light and energy and heat coming of the sun is just right. We could have a variety of stars that are inhospitable for life. A wide variety of sizes, masses and temperatures. Stars that are cooler and lower mass than the Sun. Stars that are hotter and more massive.

There is a thought in astronomy that the yellow dwarf stars are "Goldilocks stars" — not too hot, not too cool, and above all, not too violent to host life-friendly planets.

And what do you know, that is our sun.

2. The right distance from the sun. We are not that close or we would all be dead. Goldilocks zone. Too close and you burn up. Too far and you freeze.

Let's do a little science demonstration. Mclane.

How far is the earth from the sun? 93 million miles.

What is the diameter of the earth? 8000 miles

What is the diameter of the sun? 860,000 miles.

Doing a bunch of unit conversions, I can send you later if you want.

If the tip of my ball point pen, which is half a millimeter, is the earth.

On the right scale, the sun would be about 2 inches.

And the distance between the earth and the sun would be 19 feet.

Earth and the sun. Science bro. Thanks Mclane.

3. The size and gravity of the planet. Gravity is proportional to the size of the planet. Here is the equation for the force of gravity, F . The gravitational constant G times the mass of one object times the mass of the second object divided by the distance between the two objects squared.

Whoa Josh. Hang with me. Bigger planet, stronger gravity. Smaller planet, weaker gravity. If the earth is this small, gravity is proportionally weaker. If the earth is this big, gravity is enormous.

So how does gravity impact the development of life? Many ways, but here is one.

The molecular weight of methane is 16 g/mol. Methane is colorless, highly flammable gas.

The molecular weight of ammonia is 17 g/mol. Ammonia is a colorless, poisonous gas.

The molecular weight of water is 18 g/mol.

There are very close weights, molecular weights from methane to ammonia to water. 16 17 18.

Methane and ammonia in higher concentrations are deadly. Obviously, water is necessary for life. Now, Earth's gravity is so finely tuned that methane and ammonia dissipate up into the atmosphere but water is pulled closer to the surface!

4. The properties and amounts of water. Water is obviously critical for life on the earth. Our planet is 70% water. It's called the blue planet.

Think about it compared to other planets which have little or no water. And the water they do have is thought to be frozen.

Water is critical for so many biological and chemical processes that happen on the earth. Cellular function needs water. The water cycle, rain, plants, animals. Everyone and everything needs water to live.

Water is the universal solvent. There are so many things water is doing chemically that are essential for life.

Water is critical for life and we are blessed with a lot of it.

Honestly, water is probably a number of different factors necessary for a planet to support life. You could break this down into 4a, 4b, 4c.

And think about this! When material get colder, what do they typically do?

They shrink and get denser. If water did this, it would shrink and sink and the oceans would freeze from the bottom up. Till they were a giant mass of ice. But they don't. Water floats when it freezes which is unusual, as far as a material property goes. And this allows life to live under it. We take this for granted and this is amazing.

There is so much more we could say about water. But we will move on.

5. The rotation of the earth. How fast is the earth rotating? How long does it take to do one rotation? 24 hours.

Actually, 4 minutes less. The earth rotates once every 23 hours, 56 minutes and 4 seconds. Leap years fix that 4-minute error.

How fast do the other planets rotate? The fastest planet Jupiter rotate every 10 hours. The slowest planet Venus rotates every 243 days. Uranus is rolling end over end. That would make you sick.

Researchers have determined that our day/night cycle is critical for life. Too fast, too slow, life isn't happening.

Our atmosphere depends on our day/night cycle, ie the rotation. As Earth rotates, each area of its surface gets a turn to face and be warmed by the sun. This is important to all life on Earth. The sun affects everything from the weather, to food, to health.

If Earth did not rotate, one half of Earth would always be hot and bright, and the other part would be frozen and dark.

Also this rotation keeps the air moving. Distributes heat and moisture.

So our planet could be just sitting there. Or moving super slow or super-fast. But instead it moves just right.

6. Space vacuum cleaners. **The presence of large planets in outer orbits.**

Outer space, the solar system is full of pieces of rock and ice moving along at high rates of speeds. And these large pieces of rock are attracted to the earth's gravity. They could smash into us and destroy us.

Think about all of the disaster movies that explore the earth being destroyed by a giant space rock.

If the earth wasn't blessed with large outer planets, like Jupiter, Saturn, Uranus, and Neptune, it would be bombarded much more frequently. But these large planets act like giant space vacuums.

On Jupiter, some of those circles are storms, others are impact sites.

Thank God for space vacuums.

7. **The atmosphere on the earth.**

The atmosphere. The air we breath. It is made up of mostly nitrogen and oxygen. Nitrogen is a colorless, inert gas.

And the 21% oxygen is critical. Oxygen is so critical for so many of life's functions. But if you have too much it can be explosive. Too little also lethal.

Our atmosphere can carry water vapor. Critical for life in rain and clouds.

The atmosphere acts like a giant blanket, insulating the earth from getting too cold or too hot. Ozone, another gas higher in our atmosphere protects us from too much sunlight.

The atmosphere burns up the meteoroids. When meteoroids contact our atmosphere, they rub against the air and oftentimes are burned into small pieces before reaching Earth.

Air is critical for living things. Oxygen. Carbon dioxide. What struck me was how little carbon dioxide is in the atmosphere, 0.04%. Given all of the plants, that was something new I learned.

8. The earth's magnetic field. So the sun gives us life giving heat and light. But the sun is also emitting solar radiation. And solar radiation is lethal. When astronauts travel in outer space they need to protect themselves from solar radiation.

But fortunately the earth just happens to have a powerful magnetic field that protects us. Venus doesn't have this field and the solar rays have stripped the atmosphere of the planet. This powerful (but not too powerful) magnetic field is thought to be generated in the core of our planet.

This acts like our planetary force field. Like shields up in star trek. And we have it and other planets don't.

9. The moon. There is so much we could say about the moon. It could be its own lecture. In fact, we will address the moon when we talk about more astronomy in other classes. But the size of the moon, it's position from the earth. It impacts our tides and ocean currents. Keeps the ocean from getting stagnant. This is cool because it shows up what happens during a solar eclipse. The sun is over here. And the moons shadow moves across the earth.

There are so many points on moon. That is all I will say for now.

And finally, #10.

10. The tilt of the earth. The earth doesn't point straight up as it rotates. It is tilted 23 degrees. This impacts the seasons, the changing weather, the heating and cooling. During the summer, here in the northern hemisphere, we are tipped closer to the sun. This allows for more sunlight, more warmth, growing things. And then in the winter, the northern hemisphere is tipped away. Snow, rain, more precipitation, colder temperatures. Critical for life.

We will stop there. That is 10 of the 200+ factors necessary for a planet to support life.

So what are the odds that these 200+ factors combine on one planet?

But first, let's watch a 6-minute video that talk about some different factors. We have been focused in on the earth primarily. Let's move out to the universe.

There are so many factors in the universe. Before the video, this is by **William Lane Craig's group**. He is a Christian speaker and author. I have read some of his writings and watched his lectures. Brilliant man. Loves the Lord. We will meet in heaven.

But he is an old earth guy. He believes in theistic evolution I think. Because more recently he has spoken of Adam and Eve as being mytho historical. More of the poetic interpretation of Genesis 1-11 instead of a literal interpretation.

So I disagree with his old earth perspective. But this video is excellent. And I trust you are all wise enough to eat the meat and spit on the bones, so to speak.

https://www.youtube.com/watch?v=EE76nwimuT0&ab_channel=drccraigvideos

That was good.

MARS AND EARTH

So to bring this home, I want to compare Earth and Mars. Did you see the movie the **Martian**? Some language warning for sure.

In the movie, when the astronauts blast off from the planet Mars, they leave behind Mark Watney (Matt Damon), presumed dead after a storm. With only a meager amount of supplies, the Matt Damon must utilize his wits to find a way to survive on Mars while awaiting rescue.

Fun movie, but again language warning.

I am sure Matt Damon could survive on Mars for a few years if he had to. It makes sense. **Mars is similar to Earth** in some ways. It has clouds, winds, a roughly 24-hour day, seasonal weather patterns, water (polar ice caps), volcanoes, canyons, and other similar features.

But that's about it. **Mars** is a terrible habitat for life as we know it: winter temperatures can dip below -148 degrees Fahrenheit, the atmosphere contains little oxygen, and without the benefit of an ozone layer the Martian surface is bombarded with ultraviolet solar radiation.

Mars' atmosphere is over 100 times thinner than Earth's and is primarily composed of carbon dioxide, nitrogen and argon gases.

And Mars doesn't have a global magnetic force field to protect it from the rigors of space dangers.

Let's do a little pass/fail quiz on Mars.

PASS Right kind of sun.

FAIL Not close enough to the sun.

FAIL Smaller than earth, so weaker gravity.

D- Little water, frozen in polar caps.

We are watching the birth of a new worldview.

You tell someone, there aren't enough planets in the universe for one of them to have all of the factors necessary for life. And they say, multiverse! I should define that.

Multiverse: a hypothetical collection of potential universes, that would collectively have everything that is theoretically possible.

So this is becoming a solution to the fine tuning of the universe, for the athiests. Like that video said thought, the multiverse theory is undetectable, unobservable, unmeasurable, and unprovable.

That sounds very faithish to me.

But this is becoming a "scientific way" to explain our impossibly, improbable Earth without God. We are simply the product of the multiverse.

You don't believe me. I watched a TED talk this week where Brian Greene, a physics professor, talked about the possibility of the multi-verse. He is talking about inflation theory, dark energy, string theory, quantum physics, and inflationary cosmology. It's a lot of theory.

He makes his case. Boom, theoretical physics to the rescue.

It is impossible we are here.

Miracle of God? No.

Undetectable, unobservable, unmeasurable, and unprovable multiverse? Yes!

CONCLUSION

Alright, let's wrap it up. And then we will discuss till 800. Last verse.

Romans 1:19 For what can be known about God is plain to them, because God has shown it to them. 20 For his invisible attributes, namely, his eternal power and divine nature, have been clearly perceived, ever since the creation of the world, in the things that have been made. So they are without excuse. 21 For although they knew God, they did not honor him as God or give thanks to him, but they became futile in their thinking, and their foolish hearts were darkened. 22 Claiming to be wise, they became fools, 23 and exchanged the glory of the immortal God for images resembling mortal man and birds and animals and creeping things.

It is impossible we are here.

Undetectable, unobservable, unmeasurable, and unprovable multiverse? No thank you.

Is the earth a miracle of God? Yes.

Maybe the **greatest miracle** of all time.

Discussion Questions:

We will have a closing prayer at 8:00 and we will be done.