Does Science Show the Existence of a Creator?

Psalms 19:4: (NASB) ***The heavens are telling of the glory of God and their expanse is declaring the work of His hands.***

Special Guest: David Stein

"Materialism" is a philosophy that permeates much of the world today. It is the belief that physical stuff underlies everything real and it rejects any supernatural forces as having influence in our world. It teaches the universe came into existence on its own, without any intelligence or design behind it, and it has proceeded randomly since. Further, materialism claims there is no natural moral code in this accidental other than what man comes up with. Thus, there is no reason why we are here and no hope beyond death. The material world is all there is and all there will be. Related to this is the concept of "scientism," the belief that science is the only reliable source of truth. Is this true? Is science the only source of truth? Does science really validate godlessness? Or does science show something else entirely?

(Commentary has been edited for brevity and clarity.)

DAVID: I am an elder in the Allentown, Pennsylvania Bible Student Church. I have a technical background with a degree in engineering. I am not a scientist, but this is a subject that has been of interest to me since I was in my teens. There is so much available out there written for the laymen today that takes some really heavy scientific terms – we are going to keep it on that level today - that just validates faith. Materialism and scientism today are some of the enemies of the Christian faith because they want to tell you your faith in God and your belief in Scripture as a source of truth is mere superstition.

RICK: So, science is telling us this – some people are using science as the backdrop to tell you to drop your faith.

DAVID: You will find many scientists who are believers in God, and many of them are believers because of some of the stuff we are going to talk about today. In fact, if you talk to cosmologists and astronomers, a far greater percentage of those believe in God, what we call "theists" - not necessarily Christians or religious, but rather they say they cannot deny there was a designer. But there is a peer pressure in the field of biology that is materialistic, and it is for scientism. If you start to express beliefs that God created things and you are a biologist, your career may be in trouble. There is a lot larger proportion of biologists that perhaps wouldn't buy this. But, again, that is not true of all scientists.

RICK: How probable or likely is human life in the universe? What is the probability? There's something called the "Drake Equation." What is that?

DAVID: Back in the 1950's and 1960's, scientists were asking this question, especially as knowledge of the universe began to increase. Are we the only ones in the universe that have intelligence and have a culture and civilization? Professor Drake came up with an equation to estimate how many human-like advanced civilizations there are in the universe. He stated there are 10,000 intelligent civilizations in our Milky Way Galaxy based on his equation.

RICK: Just in our galaxy, not in the whole universe.

The Drake Equation

$$N = R^* \cdot f_p \cdot n_e \cdot f_\ell \cdot f_i \cdot f_c \cdot L$$

Dr. Frank Drake, a SETI Institute Trustee, formulated an equation in 1961 that has become know as the Drake Equation. Commonly accepted by the scientific community, it purports to calculate an estimate of the number of worlds that might harbor beings with technology sufficient to communicate across the vast gulfs of interstellar space.

DAVID: Drake said the important point of bringing this equation up is life is common. There is nothing especially unique about us, but there should be many civilizations out there. That was the teaching then.

RICK: So, the Drake Equation in 1961 estimated 10,000 places you could have human-like life within our own galaxy. Life on earth then becomes just a commonality, a matter of likely good luck!

There is a Scripture that alludes to that:

Isaiah 65:11: (NASB) *But you who forsake the Lord, Who forget My holy mountain, Who set a table for fortune, and who fill cups with mixed wine for destiny…*

(New World Translation) *But you are among those forsaking Jehovah, those forgetting my holy mountain, those setting a table for the god of Good Luck, and those filling up cups of mixed wine for the god of Destiny.*

RICK: And that really sounds like the idea "it all happens by chance, by happenstance."

DAVID: Exactly. As you read the definition of materialism and scientism, that is one of the important things - these are purely accidents, there was no other hand involved. Their bottom line is, this is going to happen again and again and again.

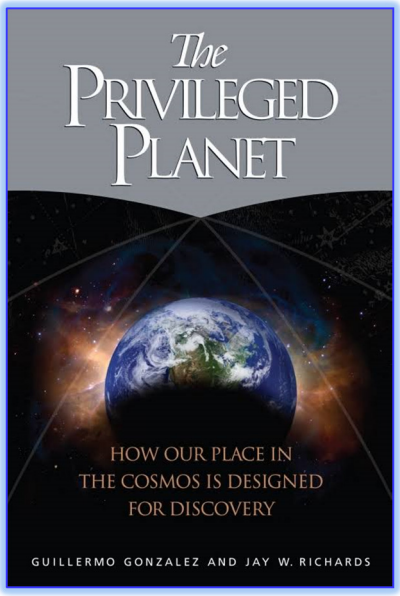
RICK: With that in mind, we ask the question again – is there nothing special about human life, about earthly life? The Copernican Principle states earth was not the center of the solar system. It used to be believed that earth was

the center of everything, and Copernicus said it was not. Tell us what trend that started.

DAVID: This is another example of a paradigm shift in human history. Prior to Copernicus' discovery that earth revolved around the sun, people believed the earth was the center of the universe. It was a religious teaching taught by the church. When Copernicus was trying to figure out the movements of stars and planets, nothing would work. The math just got untenable. And finally he put the sun in the center of the universe and had the earth revolve around it, and all of a sudden everything makes sense. That took away some specialness; at least from a religious perspective of the earth, earth is no longer the center of the universe. It is just one of several planets that go around the sun.

RICK: That actually began a trend in thinking, which we will develop further. The following sound byte gives rise to something called the "Principle of Mediocrity." This sound byte is from the book, *The Privileged Planet*, and even the sound of it, The Principle of Mediocrity, is not exciting.

The Principle of Mediocrity, *The Privileged Planet*, *Guillermo Gonzalez and Jay Richards*



- *Copernicus had laid the cornerstone for modern astronomy. Yet, 400 years after his discovery the empirical fact that our planet was not the center of the solar system had evolved into what is now known as the Copernican Principle - the idea that the earth occupies no preferred place in the universe.*
- *Copernicus had a theoretical way of explaining the apparent motion of the planets across the sky. That's all it was. It wasn't a theory that told us whether or not earth was special or whether we played some importance in the scheme of things, or whether every place in the universe was the same as every other place. Nevertheless, this reinterpretation of Copernicus became prominent in the 20th century. It's often called the Principle of Mediocrity. This Principle says that our location and our status are mediocre. They are unexceptional. As a result, we should not assume that we are in any way privileged or that the universe was designed with us, or beings like us, in mind.*

DAVID: The Principle of Mediocrity started to go from a scientific observation into humanity's philosophy; that you are not special, that there is nothing particularly interesting about the earth, the location of the earth, or what is on it.

RICK: This idea was popularized by Carl Sagan in his TV series, COSMOS - the idea that things are mediocre, just happenstance and "get over yourself."

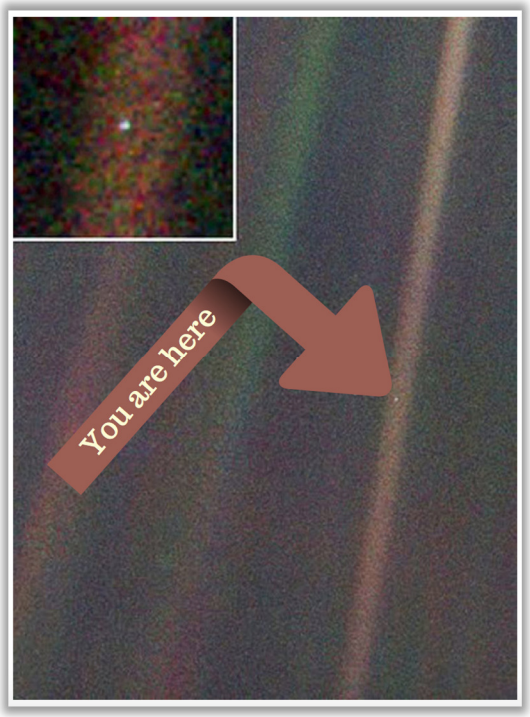


Photo taken in 1990 by NASA's Voyager 1 Spacecraft, the "Pale Blue Dot" photo shows what our planet looks like from 4 billion miles away. Earth is the tiny speck of light indicated by the arrow and enlarged in the upper left corner. The pale streak over the earth is an artifact of sunlight scattering in the camera's optics. *NASA/JPL*

DAVID: In COSMOS, that was a very strong push. There was a new series that came out and that same gospel of mediocrity has been preached. That is where the name comes from for Carl Sagan's book, *Pale Blue Dot*. There was a satellite far from earth that turned its cameras back to earth to take a picture, and it just so happened there was a shaft of light that illuminated this little tiny dot, the earth, and it seemed like the shaft of light is saying, "Hey, this is something special." In *Pale Blue Dot*, Carl Sagan says that was just an anomaly of optics.

The Pale Blue Dot, *The Privileged Planet*, *Guillermo Gonzalez and Jay Richards*

- *The Copernican Principle and the concept of the earth's insignificance was popularized during the 1970's and 80's by the late astronomer, Carl Sagan. In his best selling book, Pale Blue Dot, Sagan wrote: "Because of the reflection of sunlight, the earth seems to be sitting in a beam of light as if there was some special significance to this small world. But it's just an accident of geometry and optics. Look again at that dot. That's here, that's home, that's us. Our posturings, our imagined self-importance, the delusion that we have some privileged position in the universe are challenged by this point of pale light. Our planet is a lonely speck in the great and enveloping cosmic dark."*

RICK: Now, that's kind of depressing! So, this is the materialistic view of the universe - that we are here without purpose or significance in the universe. There is nothing special about us, and there probably are thousands of planets with civilizations like us as well. Here we are. We are sitting here, and it is all mediocre…or is it?

What is the other side of the story?
Could we be living on a "privileged" planet?

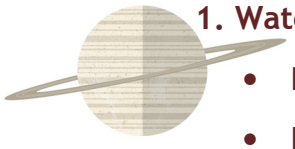
RICK: Several interesting comments came to us on Facebook about our topic, and one individual answered our question, "Does Science Show the Existence of the Creator" this way: No. The deity is a religious concept. Scientifically it is not even interesting.

I would say to this person - hold on - if you are listening, keep doing so! I think you will find it much more interesting than you may have anticipated.

In 2004, Guillermo Gonzalez and Jay Richard wrote a book entitled *The Privileged Planet: How our Place in the Cosmos is Designed for Discovery.* What is the theme of the book and why are we bringing it up here?

DAVID: Professor Gonzalez is an astronomer. I do not remember what Jay Richard's pursuit was. Both of these folks were talking about the Drake Equation, saying life should be common. They asked if it was really true – is that what science shows? They began to collaborate, looking at factors necessary for intelligent life to exist. As they started putting these factors together, they started to realize, wow, the earth is not so common after all. All of these factors indicate it is *extremely* special and that our niche in the universe is something that is very improbable. So, they put the book together and listed many, many factors, many more factors than the Drake equation glossed over, and showed a list of what had to be true in order for intelligent life to exist.

Four Factors Required for Life:



1. Water – there can be no life without water!

- Drives chemistry
- Holds heat
- Polarization of water molecule

DAVID: We think of water from a human standpoint. You get thirsty; you drink water. But there could be no life without water. Water is called the universal solvent. The water within our cells provides the medium for all the processes and functions of life to take place. Without water, you could not have life. Without water you could not have the recycling of the earth that brings materials and other things essential for life.

Water and life, *The Privileged Planet, Guillermo Gonzalez and Jay Richards*

- *All the searches that are being done for life elsewhere - their starting position is a terrestrial class planet with water.*
- *It is now widely recognized that the chemical properties of water are exquisitely suited for carbon-based life. These properties include water's ability to dissolve and transport the chemical nutrients vital to all living organisms and its unmatched capacity to absorb heat from the sun, a process critical for regulating the earth's surface temperature.*

RICK: He mentioned two very specific words we want you to elaborate on. First of all, talk about water being "the medium for transporting." In terms of chemistry, what does that mean?

DAVID: Well, you cannot have chemistry, at least life chemistry, without water. All of the processes that take place in our cells require water for these chemical reactions to take place, like the energy in your body. It has to

produce energy in some way. There is a chemical reaction in every cell that produces that energy. Water is absolutely essential. There is no other known material in the universe that can drive life the way water can.

RICK: So, it drives the chemical reactions within our very cells. We realize someone who does not believe in Intelligent Design might say water is a life force on just this particular planet and does not necessarily have to be somewhere else. We will hold off on discussing this.

Water also holds heat. It absorbs.

DAVID: This is a very unusual property – to be able to hold a large amount of heat within water. Heat capacity is like a storage vessel. That allows the moderation of things on earth like the moderation of temperature. This provides exactly the right living conditions in order for life to continue.

RICK: Then there is the polarization of water molecules.

DAVID: You know from your high school science that if you heat something it gets larger, and if you cool something it gets smaller. It is a universal concept. When you cool water below its freezing point, it does not get smaller - it gets larger. The ice expands. That is why ice floats. But think if it was not that way – if every time ice would be created, it would go to the bottom of the lake or the ocean, and then more and more would freeze and the earth would be frozen over. The fact that it gets larger and ice floats is part of this moderation.

And by the way, this idea of electrical polarization is all due to the fact that there is a slight plus charge on one side of the molecule and a slight minus charge on the other side of the molecule. There is an angle between the hydrogen and oxygen, I think it is like 109 degrees. That is what it has to be to have this unusual trait of expanding when it cools. By the way, you get water down to a certain temperature, it starts to contract like everything else. But in that early range - just below freezing - it gets larger.

RICK: And, again, that is critical for the maintenance of life.

DAVID: If it did not work that way, there would not be life.

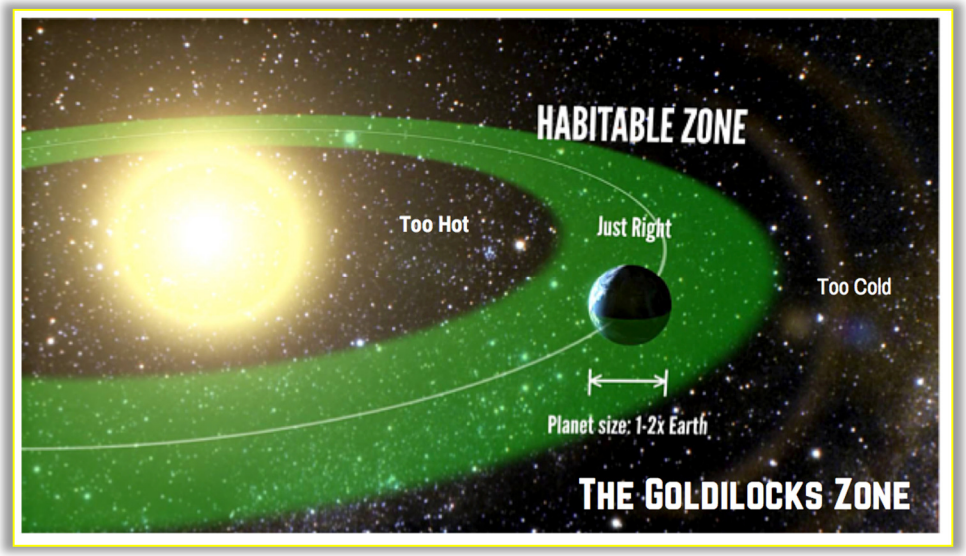
RICK: Only planets with water can have life. And only the earth in this solar system has water, which produces life.

DAVID: Right. When you look at the planets in the solar system, none of the other planets has the abundance of water. The "gas giant" planets have methane and gases like that. They think there may be some water on Mars under the surface, but they cannot see it or track it. Earth is very specific in its ability to have liquid water. We talked about ice and water – but liquid water is the key element.

RICK: Another thing that has to do with this is the earth's location, something called in science, the "Goldilocks Zone." Goldilocks and the Three Bears - what does that have to do with anything?

The Goldilocks Zone, *The Privileged Planet*, *Guillermo Gonzalez and Jay Richards*

- *The habitable planet lives in what we call the Goldilocks Zone. It's not too hot, it's not too cold, it's just right. And when I say, "It's just right," I mean just right for water.*
- *Liquid water really helps define the habitable zone. If it's too hot, the water just boils away and you can't get condensed water. If it's too cold, as it is on Mars today, it freezes out.*



DAVID: Going back to what Professor Gonzalez and Richards wrote, they were looking at what factors are necessary in order for life to exist. In order for life to be on earth, it has to be in a certain zone. If it were a little bit closer to the sun, like Venus which is 5 percent closer, we would have a run-away thermal effect. There would be no liquid water; it would be all water vapor. If you are just a little bit further away from this zone in the galaxy, it would be too cold and there would be no liquid water.

RICK: It is not too hot, not too cold; it is just right.

DAVID: How many planets in the solar system can be just in the right position? This another factor by which you can calculate the probability of life.

Let's just go to a Scripture that coincidentally talks about water and its value:

Revelation 22:1: (NASB) *And he shewed me a pure river of water of life, clear as crystal, proceeding out of the throne of God and of the Lamb.*

RICK: In Scripture, water is looked upon with great honor and respect.

DAVID: Yes. Not only do we see that in the material world, but also in the spiritual world. In the spiritual application, water represents life and the truth that leads to life. If you do not have the truth from a spiritual standpoint, then you are ultimately not going to get life.

RICK: Water is absolutely critical in terms of life. This brings us to another essential provided by the earth's interior.

What about the earth's crust?

2. Earth's Crust Thickness – 4 to 30 miles

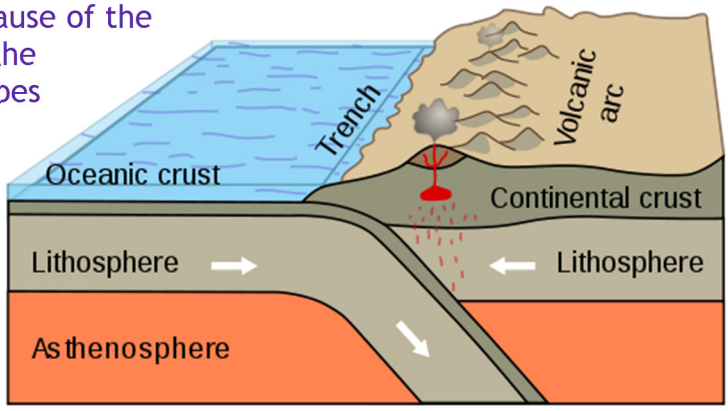
- Thicker = no plate tectonic recycling of carbon and other elements necessary for life.
- Thinner = Constant catastrophic volcanic activity, life cannot easily survive.
- Depends upon radioactive elements in the earth to heat the interior and drive plate tectonics.

The earth's crust is between four and 30 miles thick. Four miles does not sound like a lot, nor does 30 miles when you think about the size of the earth.

DAVID: It is like a thin skin of an apple when you look at it relative to the size of the whole earth.

RICK: That is scary when you say it that way! What are the parameters for the sustenance of life by way of the earth's crust?

DAVID: Let's reason by looking at extremes. You know what a volcano is. We do not have volcanoes popping up every day because the earth's crust is too thick. If it were thinner, because of the volcanic activity and heat of the earth, you would have volcanoes popping up all the time. The more volcanoes you have, the more disruption of the atmosphere you have from poisonous gases. If you remember a few years ago (1991), Mount Pinatubo (Philippines) produced around four feet of ash. Imagine that happening all over the globe in different places if the earth's crust were too thin. If it were too thick, it would inhibit volcanic activity and would also inhibit the way the crust moves around the earth.

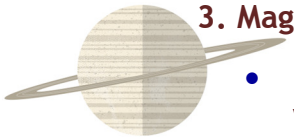


Scientists have a theory called the "Plate Tectonic Theory." It has been established pretty well by scientists. The crusts of the earth move in different directions; some go down, some go up. The ones that go down, they recycle. The ones that go up make mountains. Think about the importance of mountain manufacturing on earth, because a mountain comes up and it is filled with all these minerals, carbon and other things necessary for life. As they begin to erode, they bring these materials down into the areas where they can produce food and vegetation. This cycle of the crust is absolutely necessary for life. You cannot have life without it.

RICK: And if the crust were too thick, it would not be happening. If it were too thin, you would have all kinds of disruptions with volcanic activity. So, again, Goldilocks appears again, not too thick, not too thin but just right.

DAVID: And you will see that theme in many of the constants and factors we are looking at.

RICK: Did that just happen to be on this planet that happens to be in that habitable zone that the crust is just right? What about the magnetic field of the earth?



3. Magnetic field

- Lesser or no magnetic field = not shielded life killing cosmic rays and would slowly strip the atmosphere away → see Mars!

The magnetic field, *The Case for a Creator, Lee Strobel*

- *This radioactive decay also helps drive the convection of the liquid iron surrounding the earth's core which results in an amazing phenomenon - the creation of a dynamo that actually generates the planet's magnetic field. The magnetic field is crucial to life on earth because it shields us from low energy cosmic rays. If we didn't have a magnetic shield there would be more dangerous radiation reaching the surface. Also, solar wind particles would directly interact with the upper atmosphere, stripping it away, especially the molecules of hydrogen and oxygen from water. That would be bad news because water would be lost more quickly.*

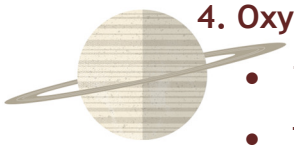
RICK: What role does earth's magnetic field play?

DAVID: Basically, it protects us from outside influences like the low energy cosmic rays that could kill us. Again the question is: What is the likelihood of a planet in our galaxy having a magnetic field? It has to have a liquid core, radioactive elements that are keeping the heat and it has to have iron. All of those factors put together reduces the probability of there being inhabitable life on planets.

RICK: It has to be *just right* to have that magnetic field be able to naturally exist.

DAVID: This is a case where it is black or white. You either have it or you don't, and you need it!

RICK: What about oxygen and nitrogen in the atmosphere?



4. Oxygen/Nitrogen Atmosphere - necessary for complex life

- 78% Nitrogen, 21% Oxygen, 1% Carbon Dioxide
- This proposal insures a temperate climate, protection from the UV rays of the sun and the right composition for liquid water.
- Also is the right proportion for fire
    - Too much oxygen – fires rages out of control.
    - Too little oxygen – burning difficult, life would struggle.

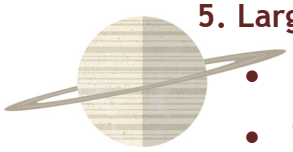
DAVID: The mix of gases in our atmosphere is just perfect for life. If you had more oxygen than necessary, it would drive oxidation too fast and it would make it difficult to have the chemical reactions that you need to moderate in order for life. In fact, you would have fires all the time. *If you had too much oxygen, fire would go out of control; too little oxygen, not enough for life, and then you couldn't have fire.* And by the way, I think the ability of man to have fire is one of the things that drive technological innovation. Without fire and without the oxygen, we could never have developed the technology we have to learn these things.

RICK: If you look at each thing individually, say, yes, that could happen, that could happen, that could happen. Now start to put them all together and we see it just does not by accident fall into place at such precise levels.

So, we are looking at water, the temperature of the earth and the way water works in relation to other things. We are looking at the earth's crust and its thickness being critical for maintaining life. With the magnetic field, you either have it or you don't. With it you can sustain life. We are looking at oxygen and nitrogen in the atmosphere. These are the building blocks of life. Are they by chance?

Several things ON our earth show our privilege.
What about the things around our earth?

RICK: We have talked about several things that have to be in place for life to exist. What are the odds? There are four more points that have to be in place, and these are things *around* our planet. First, we have the moon.



5. Large Moon – 25% of the size of the earth!

- Stabilizes the earth's tilt and rotation.
- Tidal forces circulate the waters of our oceans and seas.

DAVID: Number one, the size of our moon is unusual. There are big moons in our solar system, but they are around giants that are much, much larger than earth.

The presence of the moon and its essentiality for life is something that is not intuitive. The factors we talked about so far are intuitive. You need liquid water and you need to eat. But the moon is not intuitive. It is so large that it stabilizes the tilt of the earth. The tilt of the earth is what gives us our

seasons and helps drive the weather because of those inequalities of temperature that develop every year. If our tilt was more, we would have more extremes. If our tilt was less, we would not have the weather. We would just have more constant weather in the northern, southern latitudes, where it would be colder and hotter in the middle. So, the tilt is just perfect. But it is the moon that helps keep that tilt and stabilizes that tilt over millions and billions of years.

RICK: And it has to be as large as it is to be able to perform the task it needs to perform.

The moon, ***The Privileged Planet, Guillermo Gonzalez and Jay Richards***

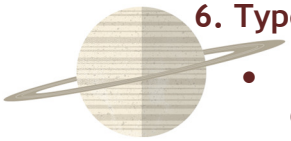
- *For the size of our planet, the moon is big. The current thinking is that if our moon didn't exist, neither would we.*
- *One-fourth the size of the earth, the moon's powerful gravitational pull stabilizes the angle of its axis at a nearly-constant 23½ degrees. This insures relatively temperate seasonal changes and the only climate in the solar system mild enough to sustain complex living organisms.*

DAVID: There is something else the moon does. We have tides around the world and the gravitational force of the moon produces the tides. Without tides, you would not get the circulation that we have - at least the circulation would not be driven so well. That circulation brings food and materials and processes waste products to enable life to continue.

RICK: The moon is vital to life. We just do not normally think about it that way.

DAVID: Exactly.

RICK: What about the sun? It is a type of star called a G2 type of star. What does that mean?



6. Type of Star – G2 – right size, right spectrum

- If less massive, like 90% of the stars in the galaxy = earth would need a closer orbit, but then the star's gravity would degrade and stop the rotation of the planet.
- Venus day = 243 earth days
- Mercury day = 58 earth days

DAVID: If the sun were less massive than it is, the earth would have to be closer to it in order to orbit around. But if the earth was closer to the sun, it would be more gravitationally locked. With the closer planets in our system, because they're closer and get gravitational lock, it means their rotation slowly slows down, and the days get longer and longer and longer.

RICK: How long can be a day?

DAVID: Well, if you live on Mercury, 58 days equals one day.

RICK: I would be so young.

DAVID: You would also be so hot! With Venus, one day is 243 earth days, and those days are getting longer. It slows down because of its proximity.

RICK: Venus' days are getting longer, but our days are not.

DAVID: Actually, our days do. Our days are getting a little longer too, but it is a few microseconds and not something that would be noticed.

Another thing with the sun is the light spectrum it gives to us is just perfect for life. When plants perform photosynthesis, they need a certain area of spectrum, meaning the frequency of light. When you think of spectrums of light, just think colors. Red is a lower frequency of light; blue is a higher frequency of light. The mix of frequencies, colors, the sun gives us is perfect for life and perfect for plants.

The sun's spectrum has the right mass, *The Case for A Creator*, *Lee Strobel*

- *Fortunately our sun is not only the right mass, but it also emits the right colors, a balance of red and blue. As a matter of fact, if we were orbiting a more massive star called an F Dwarf, there would be much more blue radiation that would build up the oxygen and ozone layer even faster, but any very momentary interruption of the ozone layer would subject the planet to an immediate flood of highly intense ultraviolet radiation which would be disastrous to life. Also, the more massive stars don't live as long. That's the major problem. Stars that are even just a little more massive than the sun live only a few billion years. Our sun is expected to last a total of about ten billion years on its main sequence, burning hydrogen steadily. Whereas stars just a few tens of percent more massive have considerably less lifetime on the main sequence, and while on the main sequence they change luminosity much faster. Everything on their life cycle happens faster.*

RICK: So, again just right! Not too large, not too small. And we have to be the right distance away so it all works.

DAVID: Yes, everything is right. And what's the probability of everything being right?

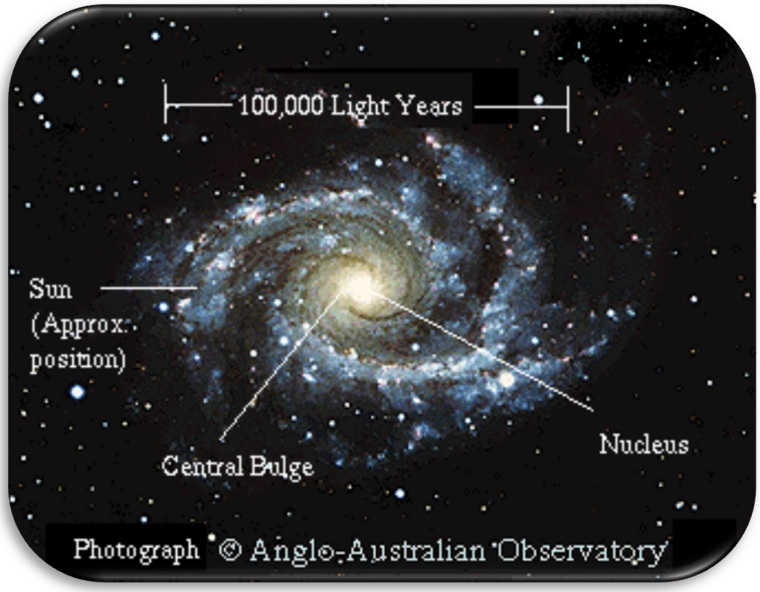
RICK: You can look at each one of these things and say, what is the probability of the sun being the right size? What is the probability of the moon being the right size and the right distance? What is the probability of having water? What is the probability of the magnetic field? What are the probabilities of all of these things? Let's go to the next point on this, which is the right location in the galaxy.

7. Right Location in the Galaxy – a galactic Goldilocks Zone!
In between two arms of the Milky Way. So what? Advantages:

- Safer from nearby supernovas which could wipe out life on earth.
- Not smothered by star and inter-galactic gas density that would prevent us from seeing out of the galaxy. So what?

- It is as if it was intended that we could find out about the universe and our place in it!

Rick: We are in a "galactic Goldilocks Zone." What do you mean by that?



DAVID: If you look at pictures of our spiral galaxy, as you get to the center of the galaxy, stars become denser. That means the radiation from stars become more dense. Also, there is something called a "supernova," what happens to massive stars when they end their life cycle. Supernovas are absolutely essential for life because it is where the heavier elements are. All the elements that we have - every atom that makes up "Rick" - came from a supernova sometime in the past.

However, here is the flip side - you do not want to be near one when it goes off! Supernovas are more frequent in the center of the galaxy, which means if the earth was in *that* location, it is very likely within a period of time – we are talking time of millions and billions of years - a supernova close enough would wipe out all life on the earth. We are out near the fringes between a couple of bars. So, we are relatively free from that. And there is something else, too. We have not yet used the term, the "Anthropic Principle," the flip side of scientism.

Scientism says there is nothing special about earth, but the Anthropic Principle says, yes, earth is special and you are special and everything was made for man. This is a religious concept from the Scriptures. The earth is located in a place where we can look outside and see the heavens. We can see other galaxies. If we were closer in the center, or even in one of the bars of the galaxy where the population of stars is high, you would not be able to see out. We would not have a lot of knowledge about the galaxy and universe. But where we are located is perfect for us to be able to learn more about where we live.

RICK: The next point is giant gas planets protecting us. We've talked about our position in the solar system. Now we've talked about our position in the galaxy. Now we're going to talk about our position in relation to other planets. Just a quick overview, what does it mean? How do these giant gas planets protect us?

8. Giants gas planets protect us!

- These are the vacuum cleaners of the solar system.
- Think about the Eugene-Levi Comet, which crashed into Jupiter a few years ago.

DAVID: Think of a vacuum cleaner when you think of Jupiter and Saturn. Our solar system is filled with a lot of debris, not as much now as when it first formed, but that debris can be deadly. We have impacts on earth where asteroids and other things have hit the earth, and there is even the idea that it could wipe out life or completely change it. The dying of the dinosaurs supposedly is attributed to such an event. We need something that will kind of clean these things up, and that is one thing the giant gas planets do. They are so massive – they are a significant percentage of the size of the sun, so they have intense gravity, and they suck this stuff in. We had an example just a few years ago - you may remember when the Eugene-Levi comet broke up and crashed into Jupiter. That is exactly the function we're talking. The presence of those gas giants again helps us avoid the problems that could hurt life.

RICK: You have mentioned eight different things. *There are at least eight different pieces in place precisely so that we can exist*. Talk about probability, because we have been asking, what are the chances of that? What is the probability of this? Give us a sense of that probability.

DAVID: Putting all these factors together - and, again, this is an estimate just like the Drake Equation at the beginning. I highly recommend either reading the book, *The Privileged Planet*, or looking at the video that is available from Illustra Video. (www.privilegedplanet.com) With just these factors alone, the probability of life developing is one to ten to the minus fifteenth.
What is the probably of life with all of these factors?

$1 \times 10^{-15} = 1/1{,}000{,}000{,}000{,}000{,}000$
(1 quadrillionth)

Think of it this way: A dime is one tenth of a dollar. A penny is one hundredth. So we see we are getting a larger number. Now, put one with 15 zeros after it. That is one quadrillionth, a very low probability.

By the way, the way probability is figured is you take individual probabilities and multiply them together to get a final one. When you have low probabilities and start multiplying them together, the probabilities get smaller very, very fast. This is tiny. This is not about the 10,000 civilizations in the galaxy that Drake said. No, this is one quadrillionth just using these factors alone.

The point here is that this is very, very unlikely, exceedingly so unlikely that people start to think it is as if the universe was just designed for us.

Job 26:7: (NASB) *He stretches out the north over empty space and hangs the earth on nothing.*

DAVID: Who was out there that took a picture of *that* back in Old Testament times?

RICK: Yes, you have to wonder, how do they know that? So far, we have looked at the earth and some of the basic principles of life that have to be in place in very precise fashion for life to exist. We looked at it in comparison to the Drake Theory which said back in 1961 there has to be at least 10,000 different planets that can support life in our galaxy, but as you analyze what producers life, we see that is not true.

DAVID: Drake says human life is unexceptional. We have found it *is* exceptional.

RICK: So, we are privileged. We live on a privileged planet in a privileged place for privileged reasons. It astounds me to even think about this! We are going to look at further evidence of the existence of intelligence behind the design, not only of our planet but also of the universe.

David: We have looked at secular science using the Drake Equation, which says there is nothing special about intelligent life. They calculated there to be 10,000 civilizations just in the Milky Way itself. We have looked at a number of factors that say something different - that life is very special. We looked at factors that in their individual consideration are very improbable - like the fact that earth has water, the fact that we are in a perfect place. We have this Goldilocks Principle we see applied - everything was just right: The thickness of the earth's crust, the magnetic field, the consistency of the atmosphere, the presence of a large moon, our sun being the right size and giving the right light, our location in the galaxy, the fact our solar system has gas giants. All of these are individual factors but when put together, they show that life depends upon a very specific set of criteria which is extremely unlikely - like one quadrillionth - and there are even more factors than what we looked at.

RICK: What you are saying is, life is meticulously planned in every aspect! And if you have meticulous planning, you have a meticulous planner.

DAVID: Exactly right. And in this hour, we are going to go into another concept related to that. In fact, it is the same concept with different words called the "fine-tuning of the universe."

RICK: We are going to be talking about something called "constants."

A caller from Connecticut suggests: Life is precarious. Psalms 149:14: *I am fearfully and wonderfully made*. I submit to you the most significant text in the entire Bible - I know this is pretentious - Genesis 1:3: *And God said, Let there be light: and there was light*. And my interpretation of that, to complement your discussion, is our Creator's interest in our planet. God is light, and He promises to make the place of His feet, His footstool. He promises to make it glorious, unique. The earth is indeed unique. One thing about water: human blood is 92 percent water.

RICK: He added "precarious," and I think that is really well stated.

DAVID: It is a word I have seen in the literature before, because if the balance is off just a little bit, things do not happen.

RICK: Moving on, what is a constant?

Definition: Universal constants are numeric values that describe how a physical law works. Furthermore, we understand that this value is the same everywhere in the universe.

DAVID: A constant is a value we have in our universe that describes physical law. It is the same and never varies. All the things that take place in the universe, all of the way that things move and develop, all the processes are limited and bounded and regulated by these constants.

RICK: Give an example of a constant.

DAVID: The speed of light is 186,000 miles per second. That does not vary anywhere in the universe. No matter where you go, it is always the same, which is why we use the term "constant." There are other constants. Remember, these constants regulate all of the processes which take place in the universe.

RICK: We are going to look at how that becomes critical to life and shows us, in fact, that we *are* privileged to have life and it is not some matter-of-fact mediocre thing that kind of happened one day.

DAVID: Yes, that is right. These constants are the basis for many of the things that we saw, like the luminosity of the sun, the color and the size, the maximum strength of gravity and all those things. The constant is what regulates that.

Fundamental constants and fine tuning, *The Privileged Planet*, *Guillermo Gonzalez and Jay Richards*

- *If you were to take the basic fundamental constants of nature and you were to change these, even slightly, or you were to pick their values at random, you would almost never get a universe that would be habitable in any sort of way. That is, you couldn't have galaxies, you couldn't have planets, you couldn't have complex biological organisms if these fundamental constants were even slightly different, slightly stronger, slightly weaker than they actually are in this universe. That's the idea of fine-tuning.*

RICK: That is pretty amazing. If they were not exactly the way they are, things just would not work.

DAVID: Exactly right. We ended the first hour with the 1 quadrillionth probability just on the few points made so far. We are going to see probabilities in this segment that are by far much more precarious.

RICK: We are looking at science with the thought that it proves an Intelligent Designer. Many Christians look at science with one eye open, one eye closed perhaps. There are creationists who say the world was created in six 24-hour

days. We are not talking about that. We are talking literally about the rules and laws of science *proving the existence of God*.

DAVID: Most people have heard of Stephen Hawking. He is a scientist in England who is considered to be like a second Einstein. He is very smart man but not religious. In his book, *A Brief History of Time*, talking about the fine tuning of the universe, he said: ***The remarkable fact is that the values of those numbers*** (in other words, the constants of physics) ***seem to have been very finely adjusted to make possible the development of life.***

RICK: Who made those adjustments? Who turned the thermostat to be just right? Who did that? It is an Intelligent Designer who did!

There are four fundamental forces known in the universe. First is the strong nuclear force. What is that? What does it mean?

Four Fundamental Forces known in the Universe:

1. **The Strong Nuclear Force** – This is the force that binds the protons and neutrons together in the nucleus of an atom (powerful forces? – consider nuclear bombs!)
   - If it were weaker by 1 part in 10,000 billion, billion, billion (10-40) = no elements except hydrogen.
   - If it were stronger = only heavier elements, no hydrogen and no life!

DAVID: It is the force that binds protons and neutrons together in the nucleus of an atom. Protons have a plus charge, and if you remember from your high school physics, like charges repel and unlike charges attract. If you have a bowl full of like charges, it should fly apart, but it doesn't because of the strong nuclear force.

The best way I can relate it to our everyday experience is if you have ever seen a video of the explosion of the atomic bomb. That was the release of the strong nuclear force. The atom was being split. Here is the precision: If this strong nuclear force were weaker by one part in ten thousand billion, billion, billion, (one followed by 40 zeros)…

RICK: 40 zeros.

DAVID: …no element except hydrogen could exist.

RICK: That is if it were weaker.

DAVID: If it were stronger, then there would only be heavier elements because they would not split apart. They would not make other things and you would have no hydrogen and just heavier elements - again, no life. Look at that precision, the precariousness that our caller talked about.

RICK: That is mind blowing - a "1" followed by 40 zeros:
10,000,000,000,000,000,000,000,000,000,000,000,000,000

2. **The Weak Nuclear Force** – This is the force that regulates rate of radioactive decay and turns protons into neutrons in the sun.
   - If it were weaker = no heavier elements, no supernovas!
   - If it were stronger = not enough heavier elements, life chemistry would be impossible.

DAVID: This is the second force, and this regulates the rate of radioactive decay. Some of our heavier atoms that are radioactive break down into lighter elements. It allows some of these neutrons and protons to break away. If it were weaker, there would be no heavier elements because there would not be the supernovas we talked about earlier. If it were weaker, there would not be life. If it were stronger, you would not have enough heavier elements to make life possible.

RICK: This weak nuclear force has to be exactly precise. There is a strong nuclear force and a weak nuclear force. The third point is gravitational force.

3. **The Gravitational Force** – The attraction between all matter in the universe.
   - If it were weaker = no fusion and no heavier elements.
   - If it were stronger = stars burn too hot and fast – short life-spans.

DAVID: Everyone knows what gravity is. Throw a ball up in the air and it comes down. This is the attraction throughout the universe between all matter. All matter tends to clump together very precisely based upon the constant of gravitational force. It is finely balanced. If it were weaker, that means gravity would not hold things together as much, and it means that you would not have a sufficient gravitational force in stars to have fusion. Fusion is what drives a star for billions and billions of years – its power source. So, if gravity was much weaker, you would not have fusion, and then you would not have any heavier elements.

If it were stronger, stars would burn up too fast because everything is clumped together and it is hotter, and the life span of stars would be short. So, again, it is just right for life in this universe.

RICK: We have the strong nuclear force - incredibly precise; the weak nuclear force - incredibly precise; the gravitational force - incredibly precise. The fourth point is the electromagnetic force, what is that?

4. **The Electromagnetic Force** – The attractive and repulsive force in electricity and magnetism.
   - If it were weaker = no chemical bonding – no life!
   - If it were stronger = heavier elements unstable – no life!
   - Balance of electrons (- charge) to protons (+ charge) crucial to 1 in 10 to the 37^{th} power.

DAVID: For this, think electricity. Electricity is an example of the electromagnetic force, like magnetic fields. It is the attractive and repulsive force in electricity and magnetism. The electromagnetic force allows molecules to form. You have elements. Molecules are when you put elements together. We talked about water = hydrogen + oxygen. The electromagnetic force keeps the hydrogen and oxygen atoms together. If the force was weaker, chemical bonding would be less. If you cannot make chemicals, you cannot have life. If the force was stronger, then the molecules would just continue to collect together and heavier elements would be unstable because they would be disrupted by the other fundamental forces and there not be life.

RICK: We are looking at these four things: the strong nuclear force, the weak nuclear force, the gravitational force and the electromagnetic force. Each individually has odds that are incomprehensible of just "happening." These are all true, clear-cut evidence of design.

DAVID: We mentioned earlier that electrons have a negative charge and protons have a positive charge. Our universe is "net neutral," which means that there is an equal number of electrons and protons. How equal is that? How precise is that? We said earlier the probability is calculated at 1 in 10 to the 37th power. Dr. Hugh Ross, who is a scientist and a Christian, has written several books and has a great website. He gave this illustration of the precision of the ratio of neutrons to protons: "Cover the entire North American continent in dimes all the way up to the moon."

RICK: Dimes over the entire North American continent?

DAVID: Yes, all the way up to the moon.

RICK: Piled all the way up to the moon. That is a lot of dimes.

DAVID: That is a lot of dimes. The moon averages about 230,000 miles from us, so imagine a column of dimes. To put it in perspective, he said, "The money to pay for the U.S. federal debt would cover one square mile less than two feet with dimes."

RICK: When did he write that, because that might be two square miles now?

DAVID: (laughter) Yes. Next, pile dimes from here to the moon on a billion other continents of the same size as North America.

RICK: Wait! So, you have a billion North Americas, a billion of them with dimes piled from here to the moon?

DAVID: Yes.

RICK: A billion of those!

DAVID: Yes. So now, paint one dime red out of all of these dimes, and mix it into the billions of piles of dimes. Now, blindfold Jonathan and ask him to pick out one dime. The odds that he will pick the red dime are 1 in 10 to the minus 37th. And that is only one of the parameters that so delicately are balanced to permit life.

So, do cosmetics have anything to do with the privilege and beauty of life? Well, we know what Mary Kay would say. Absolutely!

RICK: That is unbelievable, Intelligent Design. These things do not happen by chance. *They happen by clear-cut design*. Cosmetics? The subject is the cosmological constant.

DAVID: In the Bible, one of the words for *world* is *cosmos*. We think about Carl Sagan's series, and we use the word, but it is a Greek word that means the arrangement of things, like the social arrangement. That is where the word *cosmetics* come from. It is the arranging of your face and hair as opposed to arranging society on earth.

RICK: David, this "cosmological constant," what is it?

The Cosmological Constant:
This is a bit of a complicated concept. But we may simplify and describe it as the force that keeps the universe from collapsing in on itself due to gravity. It is an anti-gravity force or inflationary force that has been at work since the Big Bang and really stretches the universe. The value of this constant measures the balance between gravity and unbounded expansion. It has to be a certain value for our universe to exist. Of hundreds of universal constants we could consider, this one is the most precise. Its value, which has been measured, must be accurate to a precision of 10 to the 120th power. By the way, there are only 10 to the 80th power of atoms in the universe.

- If it were weaker = the universe would not expand very long and relatively quickly collapse to a singularity.
- If it were stronger = the universe would expand too quickly form solar systems.

DAVID: We mentioned earlier the four fundamentals. This should probably be considered one of the four fundamental constants, but it has only been recognized in the 20th century. Most of you probably heard of the Big Bang Theory, where the earth started out in this primordial nucleus and it exploded. It did not explode in the sense of what we think of an explosion, because it was an explosion of space, not just material. The universe has been growing and growing. Edmund Hubble measured the rate of that expansion. The question is, what is the force that is driving that expansion? The answer is the cosmological constant.

RICK: The universe itself is continuing to expand and we can document that.

DAVID: Yes. They have measured the rate of it. Now, if you think about the force of gravitation that wants to collapse the universe and the cosmological constant that wants to expand the universe, you wonder what is the difference between the two? What's going to happen eventually?

RICK: Because it is two opposing forces.

DAVID: Are we going to go back to that one thing or expand and dilute forever? That was the question scientists were asking. So, they performed a lot of experiments to measure the cosmological constant and, therefore, measure the rate of expansion, and what they found was astounding. The cosmological constant - the force for expanding and gravitation for the force for contraction - are so close together, so finely tuned, that we will have a universe that is neither going to expand forever nor collapse. It is going to reach some stability where it just continues on. In other words, we have some mathematical basis here for a universe that will continue forever. But what is of interest here is the value of this cosmological constant. They measured it and it is precise to a value of 10 to the 120th power.

RICK: Time out! So, the thing with the dimes on the billion North American continents piled all the way up to the moon that was 10 to the 37th power?

DAVID: That is like nothing compared to this, like nothing! A 1 with 120 zeros - just to put it in perspective - again, these are numbers we can't imagine. They are so large, we cannot even conceive them. We write them down on paper, but we cannot conceive them because they are so big. But they estimate that the number of atoms in the universe is 10 to the 80th power. This is 40 magnitudes larger than that - at least more precise than that.

RICK: That is amazing! So, that number is dictating the precision of the relationship between this cosmological constant and the gravitational force.

DAVID: Exactly. The balance, the precision, you cannot imagine it. It is so precise.

RICK: Let's just pause and consider here for a second. What you are looking at is there has to be, by pure definition of what we're talking about, by mathematics and by science, *there has to be design*! There has to be! And if you are thinking and following all of this, these are not numbers you are making up, David. These are scientific numbers.

DAVID: Yes, scientific facts, not speculation. These are measured quantities.

RICK: There has to be a Designer. Now, let's go to a few Scriptures because you made a really important point. You talked about the universe expanding.

Job 9:8: (NASB) *Who alone stretches out the heavens and tramples down the waves of the sea…*

DAVID: Isn't that fabulous? That is a description of what science only new since the 1930's - the heavens are "stretching." They are getting larger, expanding. It is just unbelievable.

Isaiah 41:5: (NASB) *Thus says God the LORD, Who created the heavens and stretched them out, Who spread out the earth and its offspring, Who gives breath to the people on it and spirit to those who walk in it,*

RICK: Here is a verse that defines the Intelligence, and it says *He created the heavens*. And then what did He do?

DAVID: *He stretched them out*, expanded them.

RICK: And what does science say is happening right now?

DAVID: The universe is expanding. It is stretching.

RICK: How would the prophet Isaiah, in ancient times, how would Job, who was in even more ancient times than Isaiah, have *possibly* been able to figure out that the universe is stretching out?

DAVID: He must be in contact with somebody who knows a lot.

RICK: One last verse on this, because it's such a fantastic thing -- and, again, the fact that this is mentioned several times in Scripture, it is not just a one-time statement that you say, okay, all right, they got lucky with that.

Isaiah 45:12: (NASB) *It is I who made the earth, and created man upon it. I stretched out the heavens with My hands And I ordained all their host.*

RICK: This gives us a clear-cut reference to intelligence and gives intelligence a name. It says it is God Almighty.

DAVID: Yes.

RICK: Just take a moment and breathe on this. This gives us a sense of not only clarification from a scientific perspective of the role that God Almighty plays. Now, if you have a problem calling God "God," okay. We are talking about the role that an intelligent designer plays - you can say that. This is not all chance or happenstance.

We did a program with you a few years ago about evolution, and one of the sound bytes was trying to prove evolution - it was the monkey that got lucky. This is not as a result of some monkey that got lucky. This is a meticulously designed cosmos that we look at and say, look at how it works together. Look at how it does not destroy itself. Look at how all the parts fit. When you look at the mathematical probability, you say it can't be. It cannot be just something that kind of happened.

recap

DAVID: Exactly right. We have tried to stick with the facts of science. Let me just recap where we have gone. We started out by the scientists saying there is nothing special about life - it exists everywhere. Then we looked at the scientific data and saw we live on a "privileged planet." This is very unusual. Then we looked at the basic physics upon which the whole world operates and we found the level of precision, where things have to be there for there to be life, is mind-boggling. From a scientific standpoint, do you say this was just one lucky thing or do you say - and many scientists have - looking at the scientific evidence, it is so unlikely - so vanishingly unlikely - that this has to have come about as a result of a Designer.

RICK: That is the point. *There is a Designer*. To me, David, that is a comforting thought because if there is a Designer, then there is a design. We see His design shining through in science.

DAVID: There was a British astrophysicist by the name of Fred Hoyle. He was not a religious man, but here is what he concluded, looking at all the things he looked at, and now we know a little more than he did. At the time this is addressed to those who are saying, "You still are not being scientific." This is the conclusion of a well-known scientific mind. He said, "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. The numbers one calculated from the fact seem to me so overwhelming as to put this conclusion beyond question."

RICK: So, a scientific mind is saying, look, use your head. I'm paraphrasing. Use your head. Look at the facts. Look at how they have come to be. Look at all the pieces that go into it and realize it is designed.

DAVID: And he did not have a religious agenda. He was a scientist. We can be accused of that because we are believers. We believe in the Scriptures. But a very objective look at science will help you draw the same conclusion.

RICK: David, please talk about the Multiple Universe Theory.

DAVID: If you are an atheist scientist and you like the paradigm you have of "there is no God and no creator," and you start to look at all these things, they are going to make you uncomfortable. How do you explain it if you are in that frame of mind? The Multiple Universe Theory is their explanation for something so improbable as to be without question. Suppose our universe is just one of an infinite number of universes and all these infinite number of universes have all these combinations of constants and other things. If that is true, then one of them has got to hit on the right things. Therefore, when you are dealing with an infinite sample size, we can have one and that makes sense - that is their response.

Here's the problem with that: Up to this point we have said, "What is the scientific data? What is the evidence?" If you take the Multiple Universe Theory, you ask, what is your scientific evidence for that? There is none.

RICK: None?

DAVID: There is none.

RICK: Like zero? What is the probability of that?

DAVID: Zero! You can suggest and you can come up with these things and they will address the point of low probability. If you have a sample size, it is infinite that anything can happen…but there is no scientific evidence for that. It is no longer science and we have been trying to stick to the realm of science. That becomes philosophy, and that is even more religious in terms of the faith required than what we have for the truth.

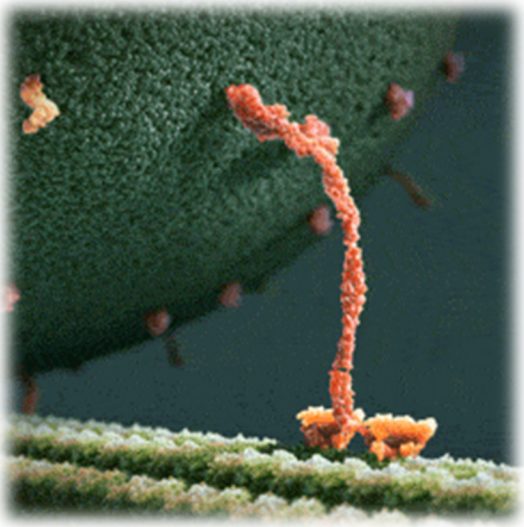
RICK: There you have it. When we are looking at probability and the facts of science, the conclusion is very obvious.

We have observed with awe, the universal precision of life – what about the tiniest forms of life?

RICK: It is awe inspiring when you look at all these things, put them together and realize there is a deep and comprehensive story of Intelligent Design that cannot be refuted using science.

David, we talked about a lot of big universal things. What about tiniest forms of life? Let's go from the big, the massive and the incomprehensible in terms of massiveness to the incomprehensible in terms of tiniest. The kinesin! What is the kinesin?

The Kinesin - This is a protein in the cell that transports large loads from one place to another by walking! The protein literally steps along a microtubule to move it to where the load is needed. How could such a thing come about randomly? *Watch the video!* https://www.youtube.com/watch?v=y-uuk4Pr2i8



DAVID: This is something I discovered just a few years ago. A kinesin is a molecular machine in our cells that pulls a load from one place to another along a "road" microtubule. Basically the way it works is it literally steps - and that one of the amazing things here – it has two "feet."

RICK: And this is on a molecular level…?

DAVID: Yes, on a molecular level, inside your cells. It pulls a load from one place to another, and it literally steps along this roadway called a microtubule. Just like in a factory, you have to move a material from one place to another – that is exactly what this does. It functions so well.

We talked about electromagnetics earlier; the way that the feet adhere to the "road" and then repel and then come out like that; it is great stuff. But coming back to this idea of design, how can such a thing come into existence through a series of accidents? It boggles the mind. It cannot be.

RICK: It does not make any sense.

DAVID: *In every way it reflects design. In every way it reflects intelligence.* Again, I highly recommend the video. This idea of a little walking machine that pulls things around the cells is mind-boggling.

RICK: That is something way inside the body that you don't know, you don't feel, you don't understand; but it is there doing its job - one of millions upon millions of jobs being done within your cellular activity every millisecond of every day. Again, is that all by chance or is that by design?

Tell us about mitochondrial DNA, will you please?

DAVID: This came to the forefront several years ago. Mitochondrial DNA is part of our inheritance we get from our mother. That is why they call it "maternal mitochondrial DNA." They did research on the structure of this mitochondrial

DNA and they did not expect to find what they did. They found that every human being on earth came from one woman sometime in the past, one mother of us all. They called it the "Eve Hypothesis."

RICK: How about that! Who allowed them to get away with calling it that? That is what I want to know!

2. Mitochondrial DNA – the "Eve" hypothesis:

- Mitochondrial DNA is passed from the mother to the child. ▫
- Mitochondria is a molecule which provides energy for the cell.▫
- Science has discovered that the entire human race is descended from a single woman long ago – thus the "EVE" hypothesis.▫
- How long ago? 200,000 years or 6,000 years? ▫

DAVID: The name has some religious connotations, and they did not intend that. But that is a scientific fact. When this was released, there was some criticism in some circles of science because they did not like the conclusion; they did not like the result. They said, "You used this particular method to derive it." Well, they used the more modern method and got the same results. It is a beautiful thing!

Now, here's what I just discovered when I was preparing for this program. They tried to put a number on how long ago our ancestral mother, Eve, lived. They said about 200,000 years ago. Of course, that did not quite relate to our scriptural understanding. Well, I found a study from a scientist in Czechoslovakia. Let me take a step back.

They concluded "Eve" was 200,000 years ago looking at the rate of mutations in the DNA, and they compared it with the modern rate. They just extrapolated it back. But this scientist from Europe did a study on some families in Russia and found an enhanced rate of mitochondrial DNA mutation. He did a recalculation and said, "It looks like "Eve" lived about 6,000 – 6,500 years ago."

I was thrilled when I saw that! What I'm saying is, there are some things in these scientific results that you like and some things, well, that just do not quite fit. 200,000 does not quite fit with the biblical record. But science does not have all the answers. You can pick and choose and you can cherry pick. We are guilty of that at times, but we would like to be as objective as possible. So, finding this one study that re-crunches the numbers, I like that.

RICK: The idea that everyone comes from that one mother is really very significant because that really does put things in a perspective where you have got to look at Scripture and, say, well, that is what it says. It gives you a very clear-cut, precise understanding of a human beginning. (We are not going to get into the evolutionary thing at this point as that is a subject for another program.)

What about DNA in general?

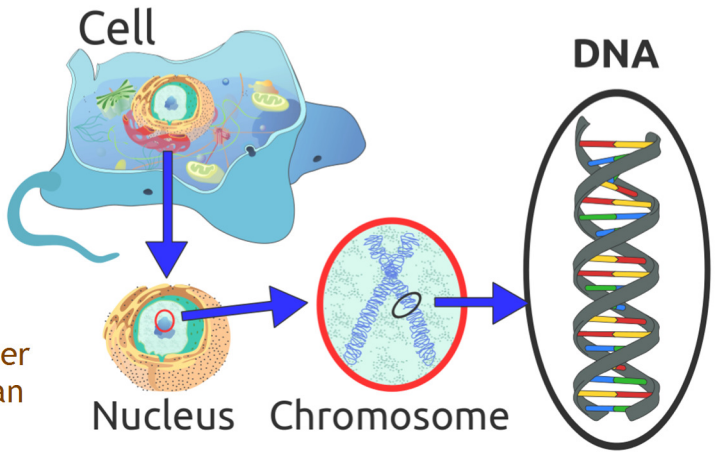
DNA

Science has shown that DNA is a biological computer program. It is an information code consisting of only four Codons:

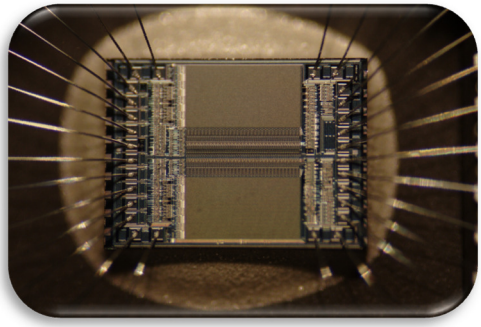
1. Adenine
2. Thymine
3. Guanine
4. Cytosine

All living creatures use this code.

- It is the sequence of the code that determines what every creature is.
- Information and a computer program only come from an intelligent source.



DAVID: What they have discovered about DNA connects up with our computerized society. Almost everyone uses a computer now. Your cell phones run on a computer chip. Home appliances run on a computer chip. In order for computers to work, they have to be programmed and there is a programming language that allows you to do it.



But if you get down to the very basics of all computer programs, it is either a "one" or a "zero." That is what we call the "codons," the basic part of it.

Scientists discovered DNA in the 1950's and have done all this research, and The Human Genome Project in particular, found there is no question that DNA is a computer program. Instead of having ones and zeros, it has four codons: adenine, thymine, guanine, and cytosine. Just like the ones and zeros, these codons are the very basis. The way you combine these in a code is where you come up with the program to make a mouse, to make a bacteria, to make an elephant, to make a human being. It is a computer program. Now, who invented the programming language? Who invented the machine to encode and decode the human DNA program? Obviously intelligence comes from intelligence. Programs come from intelligence. That is our universal experience in life. When we look at the human genome and human DNA, how can we say it just happened by accident? There are so many questions regarding the origin of DNA that have no answer and no theory in materialistic science that we conclude this is the simplest and most logical answer in accord with our everyday experience.

RICK: It came about because it was designed to come about. Let's go to another point…the ribosome.

DAVID: The ribosome is a machine within our cells that makes proteins.

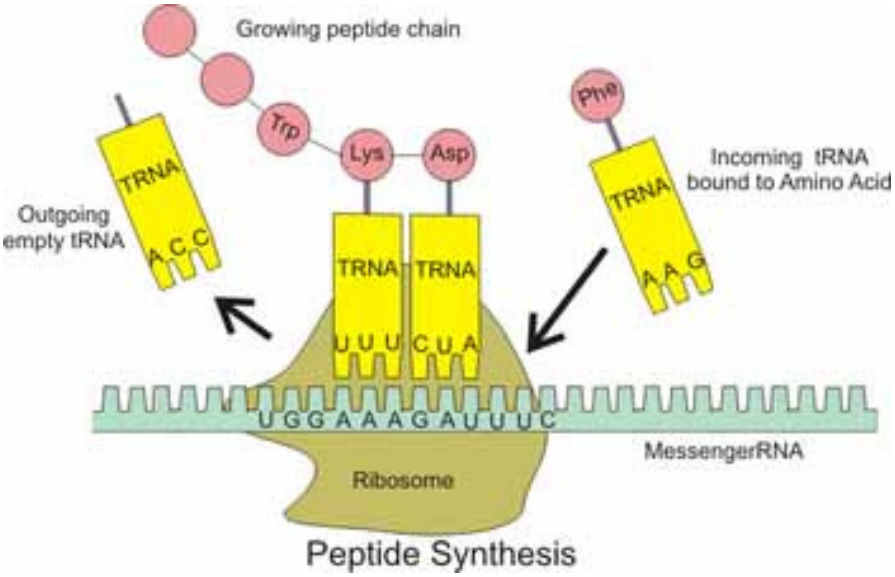
The Ribosome

- This is a molecular production factory!
- Takes RNA instructions and manufactures a protein.
- Chicken/Egg story

- Ribosomes are made of about 50 proteins

- Ribosomes make proteins – without proteins there can be no life.

How were the proteins made to make the ribosome?



DAVID: Our cells are filled with these tiny molecular machines that do things. But the ribosome is especially important. We talked about DNA a moment ago. When you need to make a protein, let's say it is an enzyme or some function that the cell needs, the cell goes back to the original DNA. It makes a copy of that section in what is called "messenger RNA." The messenger RNA comes to a cell and finds a ribosome, and says, "Use one of the four codons here. Then use this one, then this one…"

RICK: They are all "talking" to each other.

DAVID: That is right. It is manufacturing a protein based on amino acids, or manufacturing amino acids for a protein based on these instructions. Ribosomes are made of proteins. Ribosomes make proteins. We have a classic Chicken/Egg story here. Which came first? You need a ribosome to make a protein, and yet you cannot have a ribosome without already having proteins. Do you see the problem? Someone had to start this process.

RICK: It did not just pop up one day. When we have the Theory of Irreducible Complexity, all of these things could not have fallen into place simultaneously to begin a process. *It had to have been by design.*

DAVID: All of these machines are incredibly complicated and beautiful.

RICK: It is faith strengthening. Now let's take a look at the sea turtle.

DAVID: The sea turtle's life cycle starts out on a beach somewhere in the Caribbean and other parts of the world like the coast of Mexico. The eggs hatch. The sea turtles come out and go flopping through the sand. By the way, there were some engineers that looked at the arrangement of the sea turtle flippers to make machines that go through sand better. They are copying nature's design.

So, the sea turtles go out to sea, and all the while in their minds they are remembering where they are. They are taking GPS locations of that magnetic field we talked about. Okay, I'm here.

RICK: Wait, a sea turtle…?

DAVID: A sea turtle baby.

RICK: …is using the magnetic field of the earth?

DAVID: Yes. In the brain they have these magnetite that arrange, and they remember where it is. They continue to go and find their breeding grounds several thousands miles away. They stay there for eight to 50 years, and then some day when it is ready to breed they come back, they follow the same route exactly and come up on the same beach within meters from where they were born. Wow!

RICK: And they do that by using the magnetic field of the earth?

DAVID: It is one of the factors that they use, yes. They navigate by means of geomagnetic field.

RICK: So, again the question you have to ask yourself is, how does this all come about by chance? How does that happen? How do they make that trek for all of those years and then come back to the exact same place where they started? The answer with all of this is it is intelligently designed.

DAVID: The value of this to a Christian is it gives us pushback against the materialistic, scientific views of the world that are telling everybody there is no God. Science shows there is no God. Everything is random. There is no moral code; you are on your own and this is all there is going to be. That is untrue and it is unscientific. We've looked at just of a few of the things. We talked about constants – please see the Bonus Material of this Rewind for additional constants.

RICK: And for each one, the probability of it happening by chance is astronomically ridiculous.

DAVID: Here's the bottom line: Science is *not* anti-God. Science *does* show and suggest extremely strongly that there is a Designer in all that we have.

RICK: David, thanks so much for being with us. Understand that God had a design right from the beginning, and we are living through the design so that we can see the end result of His intentions, which is the blessing of *ALL*. That is the God that we know. That is the Creator of the Universe!

So, does science show the existence of a Creator?
For Jonathan and Rick and Christian Questions...
Think about it…!

And now even more to think about…
only in the* Full Edition *of CQ Rewind!

God as the Creator:
Genesis 1:1: (NASB) *In the beginning God created the heavens and the earth.*

Hebrews 3:4: (NASB) *For every house is built by someone, but the builder of all things is God.*

Hebrews 11:3: (NASB) *By faith we understand that the worlds were prepared by the word of God, so that what is seen was not made out of things which are visible.*

Job 26:7: (NASB) *He stretches out the north over empty space and hangs the earth on nothing.*

Luck and life?
Isaiah 65:11: (NASB) *But you who forsake the Lord, Who forget My holy mountain, Who set a table for fortune, and who fill cups with mixed wine for destiny…*

(New World Translation) *But you are among those forsaking Jehovah, those forgetting my holy mountain, those setting a table for the god of Good Luck, And those filling up cups of mixed wine for the god of Destiny.*

Foolish and without excuse not to see God in nature:
Romans 1:20: (NASB) *For since the creation of the world His invisible attributes, His eternal power and divine nature, have been clearly seen, being understood through what has been made, so that they are without excuse.*

Psalms 14:1: (NASB) *The fool has said in his heart, "There is no God. They are corrupt, they have committed abominable deeds; There is no one who does good.*

We are made of the elements of the earth!
Psalm 139:15: (NASB) *My frame was not hidden from You, When I was made in secret and skillfully wrought in the depths of the earth;*

***Stretching* – The Big Bang and continuing expansion of the universe?**
Job 9:8: (NASB) *Who alone stretches out the heavens and tramples down the waves of the sea;*

Psalms 104:2: (NASB) *Covering Yourself with light as with a cloak, stretching out heaven like a tent curtain.*

Isaiah 40:20: (NASB) *It is He who sits above the circle of the earth, and its inhabitants are like grasshoppers, Who stretches out the heavens like a curtain And spreads them out like a tent to dwell in.*

Isaiah 41:5: (NASB) *Thus says God the LORD, Who created the heavens and stretched them out, Who spread out the earth and its offspring, Who gives breath to the people on it and spirit to those who walk in it,*

Isaiah 44:5: (NASB) *Thus says the LORD, your Redeemer, and the one who formed you from the womb, I, the LORD, am the maker of all things, stretching out the heavens by Myself and spreading out the earth all alone,*

Isaiah 45:12: (NASB) *It is I who made the earth, and created man upon it. I stretched out the heavens with My hands and I ordained all their host.*

Isaiah 48:13: (NASB) *Surely My hand founded the earth, and My right hand spread out the heavens; When I call to them, they stand together.*

Isaiah 51:13: (NASB) *That you have forgotten the Lord your Maker, Who stretched out the heavens, And laid the foundations of the earth; That you fear continually all day long because of the fury of the oppressor, As he makes ready to destroy? But where is the fury of the oppressor?*

Jeremiah 10:12: (NASB) *It is He who made the earth by His power, Who established the world by His wisdom; And by His understanding He has stretched out the heavens.*

Jeremiah 51:15: (NASB) *It is He who made the earth by His power, Who established the world by His wisdom, And by His understanding He stretched out the heavens.*

Zechariah 12:1: (NASB) *The burden of the word of the Lord concerning Israel. Thus declares the Lord who stretches out the heavens, lays the foundation of the earth, and forms the spirit of man within him,*

Jesus believed in Adam and Eve:

Matthew 19:4: (NASB) *And he answered and said, Have you not read that He who created them from the beginning made them male and female…*

More quotes from respected scientists:

"Amazing fine tuning occurs in the laws that make this [complexity] possible. Realization of the complexity of what is accomplished makes it very difficult not to use the word 'miraculous' without taking a stand as to the ontological status of the word."

> *George Ellis (British astrophysicist)*, The Anthropic Principle, F. Bertola and U.Curi, ed. New York, Cambridge University Press, p. 30.

"We are, by astronomical standards, a pampered, cosseted, cherished group of creatures...If the Universe had not been made with the most exacting precision we could never have come into existence. It is my view that these circumstances indicate the universe was created for man to live in."

> *John O'Keefe (astronomer at NASA)*, Fred Heeren, Show Me God, Searchlight Publications, 1995

"I find it quite improbable that such order came out of chaos. There has to be some organizing principle. God to me is a mystery but is the explanation for the miracle of existence, why there is something instead of nothing."

> *Alan Sandage (winner of the Crawford prize in astronomy),* Willford, J.N. March 12, 1991. Sizing up the Cosmos: An Astronomers Quest. *New York Times*, p. B9.

"Astronomy leads us to a unique event, a universe which was created out of nothing, one with the very delicate balance needed to provide exactly the conditions required to permit life, and one which has an underlying (one might say 'supernatural') plan."

> *Arno Penzias (Nobel prize in physics),* Margenau, H and R.A. Varghese, ed. 1992. Cosmos, Bios, and Theos. La Salle, IL, Open Court, p. 83.

"When I began my career as a cosmologist some twenty years ago, I was a convinced atheist. I never in my wildest dreams imagined that one day I would be writing a book purporting to show that the central claims of Judeo-Christian theology are in fact true, that these claims are straightforward deductions of the laws of physics as we now understand them. I have been forced into these conclusions by the inexorable logic of my own special branch of physics."

> *Frank Tipler (Professor of Mathematical Physics),* Frank Tipler, The Physics of Immortality, New York, Doubleday, Preface, 1994.

"For the scientist who has lived by his faith in the power of reason, the story ends like a bad dream. He has scaled the mountains of ignorance; he is about to conquer the highest peak; as he pulls himself over the final rock, he is greeted by a band of theologians who have been sitting there for centuries."

> *Robert Jastrow (self-proclaimed agnostic)*, Robert Jastrow, *God and the Astronomers*. New York, W.W. Norton, p. 116, 1978

"I find it as difficult to understand a scientist who does not acknowledge the presence of a superior rationality behind the existence of the universe as it is to comprehend a theologian who would deny the advances of science."

> *Wernher von Braun (Pioneer rocket engineer)*, McIver, T., Ancient Tales and Space-Age Myths of Creationist Evangelism. The Skeptical Inquirer 10:258-276, 1986

"I believe that a scientist looking at nonscientific problems is just as dumb as the next guy." "If you thought that science was certain – well, that is just an error on your part." "I'm smart enough to know that I'm dumb." "Tell your son to stop trying to fill your head with science — for to fill your heart with love is enough!"

> *Richard Feynman, Physicist Extraordinaire*

Reference Data: *(Note: We do not endorse everything on these websites. We note them as good references for the subject matter of this program.)*

Universal Constants

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The Goldilocks Zone:

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The Ribosome:

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The Sea Turtle:

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Peter Ward, Donald Brownlee, Rare Earth, Copernicus Book, 2003

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Lee Strobel, The Case for A Creator, 2004

(See Youtube documentary: https://www.youtube.com/watch?v=ajqH4y8G0MI)