IS GENESIS HISTORY?
Script

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(b-roll of land)
DEL: You know I grew up in country like this. My dad and I would ride our horses up to these amazing high mountain lakes. We'd ride back into some pretty remote wilderness areas with incredible streams and meadows and wildlife. I love it here.

(b-roll of stream)
DEL: Look at this canyon. It reminds me of the Grand Canyon. You've got this little stream, you've got these steep canyon walls. How long do you suppose it would take for a stream this small to remove this much material and cut the canyon this deep? This rock has a history, just like I do and just like you do. It came from somewhere. A lot of these rocks have been dated to be 350,000 years old, up to 2 million. That's pretty old.

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DEL: But it might surprise you to know that all of the geological formations that we see here – the canyons, the layers, even the plants – are younger than I am. When I was born there was nothing here but a vast forest hundreds of feet below where we're standing right now. In fact before 1980 most people had never even heard of Mt. Saint Helens.

(b-roll of volcano eruption)
DEL: It was in that year on May 18 that molten rock created a steam blast with a force of 20 million tons of TNT. Avalanche debris and other flows from the eruption laid down all of those layers rapidly up to 600 feet thick. A couple of years later there was some more volcanic activity that created a mud flow that cut out this entire canyon. It also cut through deep bedrock all in a couple of days. Isn't it amazing what a little bit of information from the past can do to help change your view of the present and the present world around you?

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DEL: There are a lot of assumptions made by a lot of people about the history of the earth around us. The question is how do those assumptions affect how we view that history. But more importantly, how do they play into how we view science and the Bible. Did God create the world in a few days or billions of years? Is mankind descended from apes or did God create us instantly in his image. Was there a global flood that destroyed the earth or is that a myth? In other words, is Genesis history?

(credits 00:03:01-00:03:34)

00:03:37
DEL VO: When we think about the history of the earth there are a lot of things we need to consider but one of the most fascinating is the account of the flood. Was the whole earth covered with water? Genesis says the waters prevailed so mightily on the earth that all the high mountains under the whole heaven were covered. So if the flood was truly global, wouldn't there be a lot of evidence? I'd heard of a scientist who had spent over 40 years studying this question. When I spoke to him he said he had a great place where we could see evidence for the global flood. … (graphic)

00:04:13
DEL: Steve, I've got to admit, I've been here several times but every time I come here it is breathtaking.

STEVE AUSTIN: Besides being at home, Grand Canyon is my favorite place on earth.

DEL: So Steve tell me, what do you see here?

STEVE AUSTIN: When we look at Grand Canyon we see the inside story to the ground beneath our feet. And we kind of have a layer cake here, don't we, of strata that have been eroded for our benefit to see the inside structure of the earth. These same layers are also in Colorado, are also in Illinois and also in Pennsylvania. But they're extremely widespread.

DEL: So when you say sedimentary strata you're talking about the layers that we see?

STEVE AUSTIN: Yes. So the lowest layers are formed first. Those are sediment grains that were mixed, separated and flowed in here from different directions and accumulated one on top of another. And then of course naturally they covert to rock.

00:05:13
DEL: So you're saying that the solid ground we're standing on right now if we went back in its history it would be liquid?

STEVE AUSTIN: Yes. So the ocean is doing some amazing things and water of incredible power is depositing the layers we see in the canyon.

DEL: And are their fossils in all of those layers?

STEVE AUSTIN: They're marine fossils through all the layers but the standard explanation is there were 17 different advances and retreats of the ocean over the North American continent and it was extended over hundreds of millions of years.

DEL: And what is the evidence that you see here that would say that doesn't seem to make sense?

STEVE AUSTIN: The 4000 feet of flat lying strata in the canyon are flat and relative to one another. We look in between the strata layers and we don't see the passage of time in between layers.

DEL: You mean erosion?

STEVE AUSTIN: Erosion, especially in channeling on any great scale is not visible. And then we look at the strata themselves and they provide evidence of rapid, very rapid sedimentation. Just minutes or hours is all that's needed to make layers.

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DEL: Well tell me about the story of these layers. I mean how did they get here?

STEVE AUSTIN: "In the 600th year of Noah's life on the second month the seventeenth day of the month, the same day were all the fountains of the great deep broken up and the windows of heavens were opened." My understanding is the ocean floor upheaval occurred, some type of magma or earthquake propelled the oceans over the continent.

DEL: So that's why we get these marine fossils in these layers?

STEVE AUSTIN: Yes. And we have six months the waters prevailed upon the earth. Another seven months or so for the water to subside. The 4000 feet of strata probably represents the early and middle part of the global flood right here in Grand Canyon. We have other strata locally in this Grand Canyon region. That's called the Grand Staircase. We have about 10,000 feet, two miles thickness of strata on top of the Grand Canyon.

DEL: Higher than where we are.

STEVE AUSTIN: Higher than we are and that represents the later stages of the flood and the retreat of the flood water. This surface was beveled by retreat of flood waters and as the flood retreated into the newly formed ocean basins then the continents probably uplifted and the ark of course was landed in the high country in the Middle East.

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DEL: Well there's some people who say that that record is about a local flood.

STEVE AUSTIN: I believe it's a global flood and all the high hills or the whole heaven were covered, a universal statement but the mountains have risen since then. And we shouldn't measure the depth of the flood waters by the present mountains of the earth, which are largely created during the flood and after the flood.

DEL: Well the fact that we have all of these layers would be unknown to us if we were standing on them somewhere else but they're known to us because they've been cut out. How did that happen?

STEVE AUSTIN: Well it was the story that we all learned in grammar school. Okay? Colorado River over tens of millions of years cut the Grand Canyon. Most geologists have jettisoned that idea. It's hard to sustain a canyon like this for tens of millions of years. You can't imagine a canyon enduring that long with erosion.

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DEL: Is that because it would eventually the sides would have collapsed and broken down?

STEVE AUSTIN: Yes.

DEL: Then how in the world do we get this all carved out?

STEVE AUSTIN: Well there are lots of theories and personally I like the idea of catastrophic erosion by drainage of lakes.

DEL: So after the flood we have these large bodies of water, these lakes that are trapped.

STEVE AUSTIN: There's evidence of the big lake in the painted desert, a place called Hope Butes, about 500 cubic miles of water in this huge lake.

DEL: And so the dam breaks and all of that massive amount of water then is now pouring out and carving this.

STEVE AUSTIN: Yes. And how long would it take to erode Grand Canyon? Maybe weeks but not millions of years. Time is not a magic wand that solves all the geologic problems of the world. Jettison that way of thinking about millions of years and then start thinking about catastrophic processes like you see at Mt. Saint Helens and that will help you understand Grand Canyon..

00:09:41
DEL VO: Everywhere we looked, Steve showed me evidence of the incredible power of moving water. They quickly laid down these enormous layers, then quickly eroded them away. Steve wanted to show me where the flood waters first hit the continent, so he took me deeper into the canyon.

DEL: Steve, when you said you were going to bring me to the bottom you weren't kidding were you? We're at the bottom aren't we?

STEVE AUSTIN: We're in this big side canyon to the main Grand Canyon and we're looking at the granite basement rock, which is the core of the continent if you will, and then we see the flat lying strata on top of it. The boundary between the granite rock below and the Tapeats sandstone above is this surface we call the Great Unconformity.

DEL: Why does it appear to be such a stark line? I mean it's clear.

STEVE AUSTIN: I think it's an erosional boundary of colossal scale. We're looking at something that shows the magnitude of flood flow over a surface.

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DEL: And is it just here?

STEVE AUSTIN: The Great Unconformity is continent wide. I've seen it I believe in the Middle East. It's over in Europe. It's in Africa. And here it is under the North American continent.

DEL: So we've got this layer. How thick is this layer? What goes up from here?

STEVE AUSTIN: Well we have the sauk megasequence here if you will, a thousand feet of sandstone, shell, limestone that goes continent wide. There are four other big sequence packages of strata that sit above it. Those are also very continuous like this. What we're seeing here is rather representative of the rest of the world.

DEL: It makes one really question the notion that this all happened because of a small local flood. We're talking about something enormous.

STEVE AUSTIN: The power of moving water was beveling and pulverizing rock depositing great thicknesses of layers and calling our minds to think about a global flood.

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DEL: The conventional story is entirely different though. It would say that there is a lot of time between each of these layers.

STEVE AUSTIN: Some people have said that the Great Unconformity boundary here represents half a billion years.

DEL: You mean between the granite we see in that first layer of the sedimentary rock?

STEVE AUSTIN: Yeah. They say that may be half a billion years there, okay, and that's what their explanation of earth history would ask them to consider yet when you come here and look at this it's nearly a featureless plane. It's not in exactly a plane but it's a gently rolling surface. And would that be the product of billions of years or would that be the product of the power of water planeing off a surface? Time is foreign to a good explanation here and so we want to explain what we see.

DEL: Everywhere we look we see the power of water. And it's water on a colossal scale and that's the story here in Grand Canyon. It's not a little water and a lot of time. It's a lot of water in a little time.

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DEL VO: Time really is a central issue when talking about the history of the earth. How much time did it take to form what we see around us? It seemed clear to me that a global flood would have transformed the earth quickly yet I know many people think that the world formed slowly over billions of years. What was the real difference between these two views of time? I needed to talk to someone who could tell me more about science and history and time. Since my background is in computer science, we met a place where I had personally experienced some of that history. As we looked at the exhibit I was reminded how much smaller and more powerful computer have become since I first started using them. Paul said our changing assumptions about computers were really a series of paradigm shifts.

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PAUL NELSON: So when I was 19 I read Thomas Coon's classic the Structure of Scientific Revolutions where he describes this notion of paradigms. A paradigm is a framework within which you interpret evidence. So really science isn't just about the evidence; it's about how you interpret that evidence. So this room for example, we've got so called mini computers here but really they're not really mini at all in terms of our current paradigm.

DEL: Today, right?
PAUL NELSON: Yeah, this. (pulls out phone) So really to understand this question of origins you really need to begin by looking at the governing paradigms, the two major views that we currently have about the history of life and the history of the universe. On the one hand we have the conventional paradigm. In the conventional paradigm you've got deep time, 13.7 billion years along which this gradual process beginning with primal simplicity ending in what we see today. All the complexity in life has to be built bottom up by strictly physical processes where no mind, no creator, no design is present.

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PAUL NELSON: The second view we can call let's say the historical Genesis paradigm. Everything starts with a divine mind, a creator, an intelligence that plans and superintends and brings into existence reality. Events are happening on a much more recent timescale. The universe, the solar system, our planet, life itself, all of that begins fully formed as a functioning system. So when we look at the history of life on this planet we've got a body of data but depending on the

paradigm that one adopts, that data will be interpreted in very different ways.

DEL: It seems that one paradigm is drawing on a history that was given to us and another paradigm is constructing that history. Is that how you see that?

PAUL NELSON: We have a witness to those events and that witness is telling us this is what happened and we have to take that into consideration when we evaluate the data.

00:16:05
DEL: Well Paul, the reason this becomes serious is that we're not talking about a history of just boiling water at a certain temperature. We're talking about a history that deals with the origin of the universe. It deals with the origin of life, the origin of humanity, the origin of sin and why there's evil in the world, the origin of the geological formations that we have around us, the origin of language. I mean this is history that is not minor. This is dealing with major, major elements of humanity and where we are today.

PAUL NELSON: Yeah. You're talking about the origin of literally everything. And I think if we zoom out from that and say well what really is the difference between these two paradigms it isn't a question of science on the one hand versus religion on the other because both of them are scientific in the sense of looking at a common body of data. Really at the deepest level the difference is two competing views of history – what is the true history of our cosmos.

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DEL VO: That does seem to be the real question. What is our true history? What actually happened? The conflict is not between two views of science but between two competing views of history. Since Genesis was written in Hebrew, I wanted to talk to a Hebrew expert. What was actually in the original text? … (graphic)

STEVEN BOYD: The first word in Genesis is (speaks Hebrew). Genesis 1:1 is (speaks Hebrew). This is the beginning of the toledot of Noah. That word toledot is a very interesting word. It's translated sometimes genealogies. Sometimes it's translated history. And what follows then is the account of the flood.

DEL: Steve, it seems that there is a lot of history in the Bible. Is that how you see it?
STEVEN BOYD: Oh absolutely. In fact the first thing is that it's an accurate historical account. The presentation is such in the perspective of the writers that they believe they were talking about real events. It's very obvious that because of the way in which they insisted the next generation learn their history.

00:18:27
DEL: When you look at these early chapters in Genesis what do you see? Can you take us through this?

STEVEN BOYD: It starts with "in the beginning God created the heaven and the earth." There's no word in Hebrew for universe. That means he created everything. And then the next thing we find in Genesis 1:2 we find a water ball that is in space. God in the subsequent days is going to fill that universe.

DEL: Well you're talking about days here. Do you see these as literal days? Is that what the text is telling us or you know what other people think that this is just a poetic different kind of view?

STEVEN BOYD: Well first of all, it's not poetry. The world's greatest Hebraist all affirm that this is a narrative. And they say that's one of the unique features of the Genesis accounts of creation and the flood is that they are narratives because in the ancient near East they are done in epic poetry, which is very different. And here we have a narrative to indicate that this is historical.

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STEVEN BOYD: What that means is that you should understand the words, the normal way in which this Hebrew was understood. The word "yom" it means day. The foundation of its usage is what we mean by a day. It's a 24 hour day. The only way you'd want it to mean a longer period of time is if you impose an alien concept to the text and say well I think that these are ages and therefore it has to mean aging. What you have to do is start with the text. If we start with the text 'yom' means day.

DEL: So when we come to the passage that talks about the creation of Adam and Eve you're seeing that as a clear historical event which would stand in direct opposition to the

conventional paradigm that man evolved out of a long, long process.

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STEVEN BOYD: The Biblical text is not compatible with the standard conventional paradigm. The Bible teaches that the Lord God formed man artistically breathing him the breath of life, created him in his image. And then of course woman is created. We have marriage. We have the fall. Then in Noah's genealogy we have the entire flood account and the flood is it a global flood? Well I don't know how many times. 35 times or so the word "kol" which is "all" occurs in the flood narrative. If this is a judgement on mankind then it has to be global. And as we continue through these first eleven chapters of Genesis we come to chapter ten, which is called the table of the nations, which are the sons of Noah. It mentions in that chapter that the people are in their different nations and their languages. So Noah goes back in Genesis 11:1-9 and explains how the languages develop. And so we come to the toledot of Tara and the toledot of Terah is not going to be about Terah. It's going to be about his famous son, Abraham.
00:21:30
DEL: It just seems to apparent that there is no disconnect between all of that and everything that we see in the beginning. It's just one long historical narrative. Is it not?

STEVEN BOYD: It is. As a matter of fact the genealogy form the structure not just for Genesis but the narratives are embedded in the genealogies. The genealogies are picked up and actually called the toledot in the book of Ruth to establish that David is a descendent of Judah, which is required by Jacob's prophesy. And then we move into the New Testament. How is the pedigree of Jesus established with two genealogy, one going back through Mary's line all the way back to Adam.

DEL: Steve, in light of all of this that we have seen, how important is the historical narrative that we find throughout Genesis, including all of the generations that are laid out, how important is that to Christianity?

STEVEN BOYD: It shows that Christianity has historical basis. It's what the scriptures say and the scriptures represent actual historical data. So Christianity it's not a leap in the dark. It is understanding that has a very strong historical basis and that are savior is also our creator.

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DEL VO: Our savior also knew the history recorded in Genesis. On his way to Jerusalem, Jesus told his disciples that just as it was in the days of Noah so will it be in the days of the son of man. They were eating and drinking and marrying and being given in marriage until the day when Noah entered the ark and the flood came and destroyed them all. If Jesus saw the flood as a global catastrophe, what was its real impact on the earth. Andrew took me to a place where he said we could get a sense of what a catastrophic event really looked like.

ANDREW SNELLING: You see the quietness, the expanse, nothing to disturb you. Yet you've got the reminder that it was explosive in the past. There was this volcano back here, this cinder cone volcano and it belched out this lava flow that spilled out across this countryside.

DEL: Just a huge amount of basalt lava.

ANDREW SNELLING: Yeah but it's actually small compared to the lava flows that we see in many places. And there's like a thousand of these volcanoes around here and the little one behind us here we call that a cinder cone volcano.

00:24:03
DEL: You call that a little one.

ANDREW SNELLING: Yeah, well it is. These volcanoes are small. Mount St. Helens 1980 when it erupted, okay, the top 2.5 thousand feet of the volcano blew off but that was small compared to historical eruptions. We can go back a little bit further to the great Yellowstone eruption and some of the volcanic ash was down in Texas. It blew that far away. You think about lava flows in India but you have an accumulation of up to a thousand feet over an area a third of the size of the subcontinent of India. What we see in the present is really only a miniscule by comparison of what was seen in the past and that's telling us something about the historic past. We can't use present day rates of these processes to understand how quickly and how majestically in terms of scale the geological record accumulated.

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DEL: Well that is the point that has brought me to you because how do we determine the age of these rocks?

ANDREW SNELLING: Well the important first thing is to recognize that this lava flow is in a sense an instant in time. It's an event. And when it's molten you've got all the different elements that come out of the volcano all mixed up and the rock starts to crystalize. Any of those atoms that are radioactive they now start to accumulate what we call the daughter products, the decay products. Now the point is that this rate of decay is so slow where we measure it in the present that it takes millions of years for parent atoms to decay to daughter atoms. And so that's ultimately where the millions of years come from, the fact that the decay rates in the present are slow.

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DEL: But we would say the present is not really the key to the past because obviously the past holds some massive, massive catastrophic events that are not going on today.

ANDREW SNELLING: In fact the Bible would say that the past is the key to the present. If you want to understand why the way the world is today you've got to understand what happened in the past. So we've got lots of hints that geological processes haven't been at constant rates through time and we have other hints that the decay rates may not have been constant. So we've taken rock samples from a number of places - lots of samples in the Grand Canyon of each of these rock layers. I've done it in New Zealand. We've done it in other parts of the world. And what we've done is we've submitted the same samples to more than one of these dating methods. And so what we found is on the same samples with more than one method we were getting ages that were different by hundreds of millions of years and even a billion years in some instances. We're seeing huge differences by years in different methods.

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DEL: Well if there is that kind of a difference between all of these dating methods then that would seem to confirm the fact that we have an open system here, not a closed one.

ANDREW SNELLING: Correct. And if we have an open system that means we can't trust it to give us dependable dates for these rocks. And that changes the whole thinking about the history of the earth because suddenly now these radioactive plots are not reliable. We've got evidence that rates were faster in the past. Suddenly we may not be thinking in terms of millions of years. We may be thinking in terms of a history that is much shorter.

DEL: You were saying this kind of evidence is in the open literature now.

ANDREW SNELLING: Yes. Yes.

DEL: Why is it not making an impact?

ANDREW SNELLING: Well I've been asked that when I've spoken in university geology departments and the answer is because there is a commitment to the millions of years. And so once people get locked into that focus anything outside their field of view that conflicts with that focus is marginalized.

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ANDREW SNELLING: And the reason why the millions of years are important, if we go back in the history of scientific thought Charles Lyell in England proposed millions of years and they multiplied the ages for the rocks. And that was the foundation on which Charles Darwin built. In fact he read Charles Lyell's book and was convinced of the millions of years of geological evolution so he could say now given enough time what we don't see happening in the present. We might only see small changes in the present. Given millions of years small changes can add up to big changes. And so you want to have a way of looking of history that says that we got here by chance, random processes over millions of years then you've got to have rocks that are millions of years old. Otherwise you've undermined that whole foundation of that view of earth history.

DEL: So time becomes the critical element for the conventional paradigm and that time has to be deep time.

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DEL VO: Andrew said when you study the rock formations they show evidence of a young earth transformed by a global catastrophe. So he took me south to Sedona to see it for myself.

ANDREW SNELLING: The important thing to note is that this landscape is actually very stable. There was lots of erosion in the past to carve out this whole terrain but those cliffs and the valley floor are very stable, which is why you've got the vegetation. Today everything is much, much quieter. Today's processes are extremely slow but they can't explain how we got this erosion, how we got these layers, how we got these cliffs.

DEL: Alright, so you wanted to come here because you see evidence of a young earth because of what's here. What do you see?

ANDREW SNELLING: Yes. Well the first thing we notice is the extent of these layers. It's like a stack of pancakes. For example, the red unit that goes all the way across (unintelligible) that's the Schnebly Hill Formation. And above that you can see the first white unit is the Coconino Sandstone. And above that you've got the Torowea and at the horizon you've got the Kaibab Limestone, which is the rimrock of the Grand Canyon. And here we are 70 more miles from the Grand Canyon and these layers are still here.

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DEL: It's almost hard to imagine the volume of material that that represents.

ANDREW SNELLING: Yes. Take the Coconino Sandstone. We can trace it from here right across New Mexico, Colorado right over towards Kansas and Oklahoma or even into Texas. We're talking at least 200,000 square miles for this one rock unit that's consistent for mile after mile after mile. That's not the scale that we see today with localized sedimentation. And to get it flat lying like this over such a large area it's like you have to make your pancake all at once very rapidly. And so these layers show evidence of rapid sedimentation, the extent of these layers.

DEL: Well Andrew, you were talking about that red formation but that doesn't sound familiar to me.

ANDREW SNELLING: No, that's the Schnebly Hill Formation. It's not in the Grand Canyon. In the Grand Canyon we go from the Coconino into the Hermit Formation. There's that knife edge boundary and there's no evidence of erosion there, which means that the hermit formation was rapidly deposited and then immediately the Coconino was deposited on top of it.

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ANDREW SNELLING: But here we've come 70 miles from the Grand Canyon and we've got this Schnebly Hill Formation between the Coconino and the Hermit. And this Schnebly Hill Formation, 800-1000 feet thick over an area of 1000 square miles had to have been formed very rapidly. If that took millions of years

we ought to see millions of years of evidence of millions of years of erosion back in the Grand Canyon at that same boundary. We don't. So that means that this Schnebly Hill Formation in this area had to form in a matter of hours. So it tells you that only is there a lack of erosion but there's no time between those boundaries. So the whole sequence of layers was very rapidly deposited.

DEL: So we have this large extent of layers. We have the lack of erosion between the layers. What other evidence do you see?

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ANDREW SNELLING: Well if we look closely for example at the Coconino Sandstone we see the bedding that there's bands within it that are sloping. We call those cross beds. What they indicate is that you had underwater sand waves were moving along. The comparison is in a desert. It's important to recognize that there's a difference in the angle in a desert dune. It's usually 30-34 degrees of these sloping beds. Underwater it's usually 25 degrees or less and Dr. John Whitmore has combed the hills around here with his students hundreds and hundreds of measurements of these cross beds and they all come into the range of 15-25 degrees. So it was underwater deposition and so these layers are accumulating in hours, weeks and within months you've got this whole stack of pancake layers over such wide areas.

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DEL: So it isn't a difference in believing in those layers that exists.

ANDREW SNELLING: Not at all.

DEL: It's the difference of time, isn't it?

ANDREW SNELLING: Correct. It's not a question of science versus the Bible. When we're talking about the flood paradigm and the conventional paradigm we're actually talking about two different views of earth history.

00:33:45
DEL VO: Those views really are different. Of course I grew up being taught the conventional view with the long ages and slow uniform changes. But what was the history of the world

according to Genesis? … Kurt took me from one fascinating place to another showing me evidence of fossil forests, explaining the rapid formation of coal and talking about the complex design of biological systems. Everywhere we turned he showed me something new about the earth and its history. We ended up at the entrance to an old abandoned coal mine.

KURT WISE: This is leftover remains of the Dayton Coal and Iron Company built about 100-110 years ago.

DEL: What's amazing is if you didn't know that history and if you looked at these rocks you would think they were very ancient. In fact if we were in Greece you might think they were thousands of years old.

KURT WISE: It's hard to tell just looking at the structure itself.

00:34:49
DEL: Well Kurt, then I need for you to do something because I know that the conventional paradigm looks back in earth history and it's a straight line. A lot of uniform processes and so forth. But the Genesis history is telling us that it's not that uniform.

KURT WISE: Yeah, that's a good point. In II Peter chapter 3 it talks about people in the later days saying where is the promise of this coming for all things continue as they were from the beginning of the creation, that concept that what you see in the present, what's happening right now, what's happening in the creek down below, what is happening at every place in the earth is the way it's always been. It's always been for all of earth history. The passage goes on to say for this they are willingly ignorant. They're not just ignorant of these truths. They're purposely rejecting these truths, and it lists the creation and the flood. These are apparently events, according to the Bible, that aren't like the present. And the neat thing is that's what we see here. That cliff isn't actually in place. That cliff belongs about a thousand feet up. It slid down to its current location. That's a pretty big boulder.

00:36:02
DEL: That's huge. It's massive.

KURT WISE: Now what kind of process in the present slides blocks that big down? This thing continues for a mile. But

inside those rocks are yet further evidence of an event before that that's even bigger, even more unlike the present. And then inside those rocks are also fossils of a time period that's very different than the present. So according to the claims of scripture and according to my own experience you can't use the present to judge the past, to understand the past. But if you go all the way back to the beginning you realize that the Bible lays out what I would call epochs of earth history.

DEL: Major periods of time?

KURT WISE: Just different things happening during each of these epochs. But if you lived in any one of the other epochs you would never understand the previous epoch because it's so different. The first one is the creation itself. In six days God created the entire universe. He created the planets and the stars and he stretched out the universe with his outstretched arm. That's obviously not happening today. He's not creating planets. In fact at the end of that passage he says he ended his creation work.

00:37:18
KURT WISE: Then we move into what I call the Edenian epoch, the period of time when Adam and Eve are in the Garden of Eden. And it's very different than the present. We get the impression from that passage for example that Adam and Eve had they not sinned would have lived forever. It's hard to even conceive of human beings living forever. So it's a different world. Wildly different. How long it lasts? We don't know. But it certainly terminated with Adam and Eve eating of the tree of the knowledge of good and evil and God cursing the creation. He changed the rules in the universe. Now no longer is the sun going to be able to burn forever. No longer are we going to be able to live forever.

DEL: So it's hard for us to even imagine what they would be like because we only see the laws are present.

KURT WISE: And we wouldn't have come to that conclusion if we didn't have the word of God.

DEL: That's true.

KURT WISE: And that's what I think the word of God has been given to us for.

00:38:10
KURT WISE: So we slide into the third epoch of time, what I call the ante-Diluvian period, the period before the flood and after the fall of man. It's a world that's different than the present. It's got the same natural laws going on but it's a different set of critters, a different set of plants. It's a little bit warmer earth. The continents are in different positions from what they are now. It looks significantly different.

DEL: And that's what we see in Peter where it talks about that world being destroyed. So the flood was not just soaking everything. This was radical, radical change, wasn't it?

KURT WISE: Yeah if we're right about what we've understood so far we've got continents moving smashing together creating mountains. Mountains are rising to tens of thousands of feet. You've got water washing across entire continents. We're ripping tens of thousands of feet of sediment off of the old continents and then depositing thousands of feet of sediment on top of them again. It's – we're looking at earthquakes of astonishing power.

00:39:17
DEL: So this changed then from what you call the ante-Diluvian epoch now into the post flood.

KURT WISE: Basically the earth has got to recover from a global flood. The atmosphere has got to recover. The genealogy, the rocks have to recover. Plants and animals have to spread across the earth. You've got lots of water, humongous earthquakes, humongous volcanoes. And more or less that period of recover is a slow decrease in intensity and frequency of those things.
DEL: So would it be in that period that we would see the Ice Age for example?

KURT WISE: Yes. That's ironically the Ice Age turns out to be in our modeling a consequence of the heating of the water during the flood. The water is evaporating off the oceans. That cools the ocean. The water is then moving over the continents and dropping enormous volumes of water. Now in certain places the rain is going to come down as snow but coming down so rapidly and without break that it can't melt and accumulates into thick sequences of ice until they're miles thick. And then when the oceans have cooled enough that that rain generation system had stopped then those glaciers then collapse under their own wake,

melt back to the current position and they're continuing to melt. This thing global warming it is – it's recovering. The earth is still recovering from the flood.

00:40:44
DEL: So that was really a fairly tumultuous era right then but then you have one final epoch.

KURT WISE: So the modern epoch is you can study present processes and understand things fairly readily back to within a couple of centuries of the flood.

DEL: And so that would lead one to think that these processes if you take them all the way back…

KURT WISE: Precisely. You take the present processes and extend them into the back and that's what II Peter says. That's the error people make. It's reasonable. Take the present and extend it into the past. Not unreasonable. But there's evidence in the rocks themselves that you can't do that. So you need to go to the Bible to find out the necessary information to reconstruct it. And looking at it the other way, if you start from the Bible you only get the beginning of the story. God has given us the ability to read the rocks and fill in the rest of the story and we need to to fully understand the flood we start with the Bible but then we go to the rocks. Speak to the rocks and they shall tell what has happened in the past.

00:41:56
DEL VO: Kurt made a good point. The Bible records historical events but it doesn't explain how those events happened. That's what these scientists were doing. They were trying to interpret the evidence in light of Biblical history. But Kurt said there was evidence inside the rocks. What was that evidence? … (graphic)

MARCUS ROSS: I love coming to natural history museums. For me as a paleontologist it's like a chance to go to a zoo. It's all the animals that used to live before the flood. It's like a chance to step back in time.

DEL: It is like a zoo except they're not alive. They're all dead.

MARCUS ROSS: And they don't smell so that's pretty good. And the natural history museum isn't just about telling us what was

there. It's also trying to give us a storyline and we've got two possibilities. We've got these two paradigms between a naturalistic view and a Biblical view.

00:42:55
MARCUS ROSS: And all the natural history museums in the country, most of them around the world, all give you just one of those views only giving you a naturalist, old earth view of the world. But these same data, this dinosaur is able to be understood in an alternate paradigm. So when I'm thinking about these types of creatures I'm thinking about a world that's right before the flood

DEL: I mean this is a real picture of a violent world.

MARCUS ROSS: Yeah. It's why God said behold the end of all flesh. It wasn't just mankind. Man and all of the animals over which we rule are judged at the time of the flood.

DEL: Well Marcus, can you kind of give us an overall picture of the fossils and how all this stuff fits together.

MARCUS ROSS: Yeah. Fossils tend to be found in distinct layers where there are very, very large numbers that have been destroyed, untold billions. And so every time we see a layer of rock that's this thick we're thinking about an event that probably took minutes to make, not thousands of years. Minutes for just this one package of rock, sometimes even seconds.

00:43:57
MARCUS ROSS: Now where these pulses of water from the flood are moving over the continents grabbing ecosystems or dragging marine ones up from deep in the ocean and pulling them onto land and as one gets deposited and waves come back they start pulling and piling additional stuff on top of that. And it's a graveyard on top of a graveyard on top of a graveyard. It's the sort of thing that speaks to catastrophe, not the sort of thing where the fossil record is gradually accumulating bone by bone, shell by shell, little by little over untold eons of time.

DEL: So you're saying that we have these marine fossils all over, even on mountains.

MARCUS ROSS: Yeah. Further back over in the museum they've got sections with things like Mosasaurs, these big swimming reptiles. Mosasaurs are globally distributed and they're distributed on continents. So looking at these things you're saying what is it that has the power, what is it that has the capacity to take the marine world and throw it on top of the continents in such a violent and destructive manner. And the flood makes perfect sense for this.

00:44:57
DEL: When we were in the Grand Canyon we saw that Great Unconformity and there were no fossils to speak of really below that and then all of the sudden we start getting a lot. What does that say to you as a paleontologist?

MARCUS ROSS: Well the Great Unconformity is telling me that there's some sort of massive erosion and sheering that's happening across the continent. And then once we start getting to those nice sedimentary rocks that have all the wonderful fossils in them the pattern starts to emerge. The ecosystem that has the first animals in it shows up very suddenly. In conventional paleontology they call this the Cambrian explosion. It's the first appearance of a wide diversity of different types of marine animals. All the sudden you have this complex and whole ecosystem that shows up basically out of nowhere. Now that makes perfect sense from a creation and flood perspective because the flood is about destroying ecosystems, whereas in an evolutionary view these ecosystems are going to have to arise a little bit more gradually as organisms diversify and evolve and respond to one another in their environment.

00:45:57
MARCUS ROSS: But that's not what you see. Instead you see an explosion of life that is complex, whole, the ecosystem is integrated with one another. You can see where all the different organisms fit with respect to one another. And that's just the first time that that happens. Every time you move up in the geological column in this fossil record you start seeing snapshots of more and more ecosystems. You've got one ecosystem that's destroyed and then you've got another one. It's got slightly different creatures, there's different interactions going on. And as the flood waters move higher and higher they are getting closer and closer to shore destroying more and more organisms in the shoreline and eventually up onto land.

DEL: So I think I see what you're saying here and that is that the paradigm that we're all taught, that conventional paradigm is trying to tell us that the fossil record is an evolutionary picture of
life as it is developing as opposed to the Genesis paradigm that's saying no, all of that life, all the complexity of life already was there and now we're looking at the graveyard of all of that life.

MARCUS ROSS: Exactly.

00:47:03
DEL: Well what are some of the other data that you're seeing that convinces you of this paradigm?

MARCUS ROSS: Well one very curious situation with the fossil record so thinking vertically about things is not the hard parts of the animal but the trackways. They're the footprints. This is a pattern that we see in several different groups where their footprints are first and their body parts are later. For the trilobites, for the amphibians, for the dinosaurs, the first time I find evidence of them in the fossil record it's from trackways, not hard parts. From an old earth perspective that's really weird and hard to grabble with because you have millions of years between the trackway production and ultimately the animal that made it. But that obviously doesn't make a whole lot of sense because if there's trackways there's animals and those animals have bones and teeth and shells to them. Why aren't they fossilized? Instead the pattern is telling us something different. There's no time between when somebody leaves a track and when somebody gets buried.

00:48:01
DEL: But the fact that those track waves are still there, that should tell us something as well, shouldn't it?

MARCUS ROSS: One, it tells us that the deposition or the placement of the next layer on top of them had to happen very, very quickly because again you go out onto a beach and you walk in the sand you're trackways are destroyed very, very quickly. But the fossil record is showing us something very different from today. This is death in a moment. This is death in an instant. And we're talking about a world that was complex, whole, integrated and the flood is destroying that world sequentially and burying it in a vertical fashion. And so I think looking at the fossil record as a record of life is partly

correct but it's not about life's development. It's about life's attempt to survive an event that ultimately consumed all of them.

DEL: Well that would make sense then because when God was talking about destroying the earth with the flood it wasn't just the destruction of human life, it was the destruction of all life. And so now the world we live in is, as you said, radically different than what that was before.

00:49:07
MARCUS ROSS: Yeah. When we look at the T-Rex, when we look at the Mosasaurs, when we look at all these animals as ferocious carnivores and they really are - I mean they're terrifying – but that's not what they were initially created to be. And so these sharp teeth, these devastating claws and the behaviors that go along with them all seem to be part of the curse and part of that is genetic. Part of it might also be just some modifications. But these organisms by the time we see them and this is important for us to remember when we come to a natural history museum is you're not seeing the world at creation week. You're seeing the world as it existed at the flood and that world was one that was filled with violence and was a pretty terrible place to be.

00:49:49
DEL VO: I realized that the billions of creatures buried in those layers are a silent testimony to God's global judgement. I decided I wanted to see one of those layers of fossils for myself. If the dinosaurs had died suddenly in the flood wouldn't it be obvious? … (graphic)

ART CHADWICK: What we're dealing with here, this is in the lance formation. This is a upper cretaceous sedimentary deposit and what we have here is what's called a bone bed. It's an accumulation of bones that's about a meter thick, a little less than a meter, and in this meter we find the bones present as a graded bed with little bones at the top and bigger bones at the bottom. And you can see here it looks like is working on another vertebrae here. This is a cervical vertebrae of a duck billed dinosaur. This is where the spinal cord goes right there. When I look at these bones in the coria I often think of them as being inside the animal alive and just imagine what it's like to be seeing these bones for the first time.

00:51:01

ART CHADWICK: So this is just full of bones and it's not like we have to go looking for where the bones are. We just have to sit down and start digging.

DEL: What is mainly different about the sites that you're digging here as opposed to what we'd say a general dinosaur dig somewhere?

ART CHADWICK: Well there are dinosaurs found all over the world but this particular site is unique in that it's probably one of the largest collections of bones in the world. And there are the remains of I'd say between 5,000-10,000 animals each 20-40 feet long in this deposit. These are big animals and there are a lot of them.

DEL: Let's step back for just a second. Okay so we had a duck bill dinosaur roaming around the earth and all of the sudden it dies. Would it become a fossil?

ART CHADWICK: Fossilization requires very special circumstances. Normally we know for example if a coyote dies out in the desert his body is soon gone. Yet these bones are all perfectly preserved. They have never been subjected to weather. They are just all there. Today it would be very difficult to imagine how you could do that.

00:52:12
DEL: To some extent we would really say that to find a fossils is rare. Even though we have many, many fossils in terms of things that die, it's rare if they become fossilized.

ART CHADWICK: It is rare. It requires special circumstances, not the least of which is rapid burial. These animals had to die and then their carcasses had to have time to rot. So we're talking days or weeks or months during which time the bones, the tissues were either eaten away or rotted away and then the bones that remained were deposited instantaneously in this environment because they're in a graded bed with big bones at the bottom and little bones at the top. And you can see that here. The big bones are all down at the bottom and when they start digging up here they start to find smaller bones. So that condition requires a sorting process that only takes place during a catastrophic placement.

00:53:08

DEL: So when we look at the dinosaur fossils rather than looking at them from the standpoint of we have early dinosaurs, then middle dinosaurs then later dinosaurs, you're looking from the perspective that all those dinosaurs were in existence. They were all living and then there was this huge catastrophe that brought them to an end.

ART CHADWICK: The dinosaurs are already dinosaurs when they first – when they first appear. They look just like anyone would think a dinosaur looked. And this is an enigma for those who believe in evolution of the dinosaurs.

DEL: But we hear a lot about transitional forms. What's the real story there?

ART CHADWICK: What we find in the fossil record and contrary to Darwin's hopes this is the rule is that a form exists in the fossil record. It basically stays unchanged and it disappears from the fossil record without having been changed. That's got to mean something besides evolution because we don't ever see changes from this form into this form in the rocks themselves.

00:54:11
ART CHADWICK: So it's coming from somewhere else. It's a paradigm that's being imposed on the data rather than the data is providing the paradigm. So I think it's very easy for me to be a creationist just based on my understanding of the complexity of lifeforms. And when we look at the fossil record we can see the complexity is all there from the beginning and this begs the question of where did all this complexity come from. It's one thing to have faith. I have faith that God was the creator, but that's substantiated by what I see around me. To say I have faith that evolution produced this when I can't even see how it could have happened, that's blind faith.

DEL: That's a leap in the dark.

ART CHADWICK: That's a leap in the dark.

00:54:58
DEL VO: It seemed that everywhere I looked there was a growing body of evidence that fit the historical record of Genesis. It wasn't just one thing; it was many things pointing in the same direction. When I was with Art he told me about some recent

discoveries of material inside dinosaur bones so I traveled to a lab in Arizona to talk to a scientist who is doing some of that research himself. … (graphic)

KEVIN: This is a fragment of a triceratops horn. When we pulled it out of the ground it fragmented and then of course we've had to continue to fragment it in order to do analysis of it. In 2012 the creation research society sponsored Mark Armatig and I to go to the Hell Creek formation in Montana, which is a very popular place for finding dinosaur bones, and we instead dug out a almost four foot long triceratops brow horn. Now it's just in crumbled pieces now so we can't really put it together and show you a horn, but yet you have to recognize that pieces such as this we have found tissue with cells.

00:56:10
DEL: Oh that's amazing.

KEVIN ANDERSON: And potentially proteins such as collagen. It's so difficult to understand how you could have this material still in a dinosaur fossil that is supposed to be 65, 75, 80 million years of age because tissue, cells, proteins break down. They're not concrete. They don't just exist for eons of time. They break down and in fact they tend to break down fairly quickly depending upon the conditions and certainly in Hell Creek the conditions would be warm up, cool down, warm up, cool down. And any biochemist can tell you that is the fastest way to destroy material. It's difficult enough to envision it surviving for 4000 or 5000 years but 60 million years, 70 million years? That really becomes very difficult to make any kind of biochemical basis for how it could have survived.

00:57:07
DEL: Ok so once you find a sample like this what do you do next?

KEVIN ANDERSON: So what we do is we soak the fossil material in a solution called EDTA. And what you'll have after you dissolve the fossil is the tissue will be remaining because the EDTA won't dissolve the tissue. So then I'll bring this over to what we call a dissection microscope. This is in essence dissolved triceratops horn magnified and so you can see what it looks like. Just kind of little pieces of rock. And what you'd look for for tissue is you'd look for areas like this that are a little bit more shiny. They're going to have more of a smooth texture.

DEL: Well Kevin, what did you find then when you were looking at the sample and you actually found some tissue?

KEVIN ANDERSON: Ok, here's what we found. This is actually triceratops tissue. Its stretchable. It's pliable. It's not an impression of the soft parts of the dinosaur. This is truly soft. It is squishy. It is stretchable. It is tissue.

00:58:14
DEL: That blows your mind, huh?

KEVIN ANDERSON: Absolutely. And if you look at them then at a closer magnification what we see then this is using scanning electron microscopy. You see the extreme detail of the cells in that picture and this picture and particularly like look at this picture. We would not expect, begin to expect to see such enormous and elaborate detail. I mean these structures are incredibly small. This is our 20 micron bar here and see how small these structures are still intact. It would take very little to break those. So at best you would expect that all that would have broken off and been long gone.

DEL: So that has to have shaken up the scientific community. What's been the response of all of this?

00:59:04
KEVIN ANDERSON: The initial response when Dr. Schweitzer first published her work, which is what became very popularized in 2005, it generated a lot of response. And so initially some of the reaction was rejection. Oh it's contamination. That's not really dinosaur. It's bacteria because bacteria can look kind of strange sometimes. So you had a lot of proposals of what it could be. And to her credit Dr. Schweitzer did more work. They began to find protein. You break open some of these cells, you look at the matrix these cells were attached to and they are protein.

DEL: Ok, so once that is understood when what happens? Now this is shaking it up I guess.

KEVIN ANDERSON: That becomes part of the controversy because clearly you're not faced with how could you explain the survival of this, the pristine survival of this not only for so long but in very unpristine conditions.

01:00:08
KEVIN ANDERSON: And so then the controversy has been how do you explain it. And if you read some of the literature there's almost like desperation it's because they recognized what the implications of this could be. Now some people would claim well it means nothing because we know how old they are and therefore it just seems it survived somehow. Big deal. But how do you know how old they are? You use methods, supposed methods of dating. Well this is a method of dating. The tissue itself can't be discounted as a part of a method of dating. So why do you say that doesn't count but this does count? Well it's all the paradigm drives your conclusions. The paradigm is it has to be old, therefore methods that give us an old fossil are what we choose. Something that does give us an old fossil like tissue we have to reject or explain away.

DEL: At least to me, and of course I'm not a microbiologist, but I think most people would say well that just seems reasonable to think that maybe these are not that old.

01:01:07
KEVIN ANDERSON: Clearly this is in violation of the dating process. It challenges the entire dating process. If the fossils of dinosaurs have been dated incorrectly, which I would say this is clear evidence they have, then it's very likely the fossils of any organism have been dated incorrectly and therefore then the geologic ages themselves are incorrect.

DEL: What you're saying is that if you pull out the notion of a long period of time you're pulling out a major foundation for the conventional paradigm.

KEVIN ANDERSON: Absolutely. In fact time is the critical component for evolution. If you're going to say that a simple cellular system because a multi-cellular system that then became fish and the fish then jumped up on land and grew legs and started breathing air and then that creature grew feathers and wings and started flying. So if you give us time we'll claim to account for all of this massive change of organisms but we've got to have the time.

01:02:18
DEL VO: Everything seemed to come back to the question of time. I remembered Andrew saying that Charles Darwin accepted millions of years first, then fit his theory of evolution to that assumption. But why is time such an important element to

evolution? … (graphic) Rob is a marine biologist so he took me scuba diving to get a glimpse of a world most people don't see. His specialty was coral and he knew a lot about the incredible creatures that inhabit the reefs around St. Thomas.

DEL: Oh man, we've got the sharks here. Just look how they move and it's almost like effortlessly glide along. I wish I could swim like that.

ROB CARTER: Engineers wish we could make boats like that. Submarines that could move as efficiently as a shark, we can't quite do it.

01:03:14
DEL: So from your perspective as a marine biologist and I know that you've studied the whole area of genetics a lot, when people talk about evolution what is it?

ROB CARTER: How do you define evolution? The word means 'change over time' but I believe in change over time but I'm not a evolutionist so how does one figure this out. Really evolution is a belief that enough change over time over enough time can lead to the common ancestry of all species on earth. So that's the part I reject. Of course species change. I mean look at these sharks here. We have several different species of sharks. When God created he put into those organisms the ability to change, to adapt, to respond dynamically to the environment. But they are still sharks and when we look at the fossil record they are still sharks. People have heard the phrase 'the missing link' and they usually think of between a man and a monkey. No, there's missing links between almost every major group of animal and almost every other major group of animal and plant and bacteria throughout the entire fossil record, which indicates very strongly that these are actually different creations.

01:04:24
DEL: So we don't get one kind becoming another kind?

ROB CARTER: No. Evolution theory requires that small, random changes can explain everything we see but it can't.

DEL: And why can't it?

ROB CARTER: Because life is so complex that small changes can't explain it. Just like you can't take a computer operating

system and look at it and say oh yeah this is built up one digit at a time over any length of time. No, it took an intelligent person to sit down and put it together.

DEL: Well I can guarantee you as one who was in that world that if anyone in the area of computer science were to say if we just randomly changed some things in this operating system it will get better. I mean no one would agree with that.

ROB CARTER: No, we're not going to get the shark to evolve into a bird. The number of changes and the types of changes are not something that you can do one change at a time.

01:05:22
ROB CARTER: This is a sea urchin.

DEL: It looks spiny.

ROB CARTER: It's pointy. You've got to be careful.

DEL: Am I going to get stuck when I touch it?

ROB CARTER: No, he's pointy but…

DEL: Oh my goodness, they're moving.

ROB CARTER: Yes, they're moving. And in between the spines are little tube feet, especially on the bottom. Look at that movement. So he walks with his spines with these little tube feet in here and that's what he uses to grab onto things. But looking carefully there's one, two, three, four, five, six, seven, there's actually ten radial parts to this animal.

DEL: Huh.

01:05:56
ROB CARTER: Actually the starfish is his cousin.

DEL: Are you serious? You can't be serious.

ROB CARTER: Absolutely. The starfish here is also an echinoderm but notice he has five fold symmetry instead of ten. This starfish does. On the bottom, look, we see the spines. We see the tube feet. His mouth is in the center there.

DEL: So there is some similarity here even though externally it looks a lot different.

ROB CARTER: A lot different. You want to see something that looks a lot different?

DEL: Sure.

ROB CARTER: Which is a cousin to the starfish and the sea urchin?

DEL: Alright. It almost looks like a rock.

ROB CARTER: Yes, yes, I've got to be careful. He's squirting on me. This is a sea cucumber. He has spines. He has tube feet. You would never know it until you studied really hard that this also is an echinoderm. He's not very happy being out of the water so let me put him back in.

01:06:52
DEL: So these are all related even though they look very, very different.

ROB CARTER: Related in their creation. Not in an evolutionary sense but our creator took this phylum of life, the echinoderms, and created this and this and this on a similar pattern. And that's what we see across the entire realm of life, similarities and differences.

DEL: So what makes them different?

ROB CARTER: Well genetically they share most of their genes in common but there are developmental genes, they're called hox genes, that set up these patterns in the animal as it develops. They develop from a single cell. In one of them they set up a five fold symmetry. In another they set up a ten fold symmetry. Another one they make this long skinny animal. They control the development of the embryo in these amazing ways.

DEL: So what you're saying when we look at this from a molecular or genetic perspective what we're finding is really a fascinating design in all of this.

ROB CARTER: Absolutely.

01:07:55

DEL: But what we've heard in the conventional paradigm, the conventional story tells us that it's those random changes that has brought about all of this.

ROB CARTER: Sure. Back in the 1800s when life was simple, when they didn't know what was happening inside the cell, they didn't how how complex genetics was, you could imagine all sorts of things. But now that we know what actually happens behind the scenes the story gets a lot more complicated. You see, I'd like to say the genome is four dimensional. Our computer programs are simple. We write in lines of code. We have one dimensional string called DNA but that DNA it interacts with the cell. It's this huge two dimensional interaction network. So this part over here produces something, maybe a protein or maybe an RNA that comes over here and interacts with this party that turns something on or turns something off.

01:08:45
DEL: Let me stop you for a second because this is really amazing to think about this because I think in terms of a computer program that it's fairly static. The instructions are there. But you're talking about a program that is reprogramming itself. It's modifying it's own instructions.

ROB CARTER: We take it to the fourth dimension because there's a third dimension first. The information in that first dimension, that linear string, has to be organized in such a way that when it folds into the third dimension it still works.

DEL: Oh that's amazing.

ROB CARTER: Genes that are used together are next to each other in 3-D space.

DEL: Are you saying that once this thing gets folded up it's almost like we have a new set of instructions?

ROB CARTER: Yes, a new level of information that whoever programmed that first level needed to understand what was going to happen to have it work in the third level.

DEL: You said there's another dimension.

ROB CARTER: Oh yeah, the fourth dimension is time.

DEL: And how does that work?

01:09:41
ROB CARTER: The genome changes shape over time. Maybe you eat something that's bad for you and your liver says I can get rid of that toxin. Now the chromosomes in the liver will change shape, expose that new protein gene, make copies of it, build a brand new protein that can kill off that toxin and when it's not needed anymore they'll change shape again and fold back. Dynamic programming, all three levels change in the fourth level, time.

DEL: Rob, that so far beyond anything that we know even in our most complex software systems that it's almost beyond imagination to think that someone would look at that and say it all happened by chance.

ROB CARTER: Yes, and it only brings glory to God.

DEL: It does.

ROB CARTER: You can't build something like that one thing at a time. You need it to function in all its interlocking four dimensional complexity. It's not something you can do one letter at a time with natural selection.

DEL: It has all to be there.

ROB CARTER: Yeah in the same way when we talked about the environment out here on the coral reef, if you don't have all these interlocking pieces of that puzzle you don't have that ecology. The system will come crashing down if you just remove a couple of very important factors that are there. They have to be together or it doesn't happen.

01:11:00
DEL: So not only did we have this interdependency, this mutualism so to speak down at the genetic level, now we even make it more complex by saying there is that same mutualism at the higher level as well.

ROB CARTER: Yes. In fact the entire world has a mutualism.
DEL: It's impossible to think that all of this could have happened just by a series of slow processes over billions of years.

ROB CARTER: That's exactly what I'm saying.

01:11:27
DEL VO: It's clear that the world we live in is incredibly interdependent from the smallest biological system to the largest ecosystem. There are complex mutual relationships everywhere. I realized the creation in six days makes the most sense from an engineering perspective. You need everything working together at the same time for everything to function properly. And that's exactly how Genesis says God created it. Rob also said God created animals with the ability to change and adapt to their environments. Is it possible this unique ability has been mistaken for evolution? … (graphic)

01:12:24
DEL: As a biologist what do you see when you see all of these creatures?

TODD WOOD: Yeah when I look at this, these lions specifically, I'm seeing cats myself. And all the other cats they have here at the zoo, they all have this underlying catness to them that's really apparent. It's really apparent when they start playing, right? You're seeing them play with some of ball or something and they look…

DEL: They're just like a cat.

TODD WOOD: They look like a cat. Scientists would put that into a family called felidae and I would understand the felids to be representatives of a single created kind. So the continuity, the similarity there is so significant that I'd say these guys have all descended from a single pair of critters that was on the ark and that eventually generated all the different sorts of cats that we have today.

DEL: So rather than just a random accident, it appears as if all of these different species are coming from a really elaborate design.

01:13:26
TODD WOOD: Oh absolutely. And it's not just a design like God designed and created the lion. It's God created something that could make a lion. So it's more like a multi tool or a Swiss army knife where you've got all of these pieces that you can just pop out whenever you need them but it's all just one thing.

DEL: Give me some other examples of created kinds.

TODD WOOD: Yeah, so you've got the grizzlies and the polar bear. Those are all members of the bear kind. You've got ducks, swans and geese. The thing about the dog kind is really interesting. So you take just this just old flight creature and we can breed in only a few hundred years many different breeds.

DEL: Well Todd that's kind of fascinating now to think about what God was doing when he was bringing two of every kind. What do you think was going on there?
TODD WOOD: Oh yeah. He doesn't have to bring every little variety onto the ark. So when you actually do the calculations and ok so we don't know exactly how many created kinds there were on the ark but maybe a couple of thousand and they're small. Most animals are quite small. So you have room to spare, literally room to spare and all of that diversity that we have today is built into those two
of every kind.

01:14:38
DEL: Well Todd you're looking at the zebras and they're all unique and yet all of these creatures are just so much complexity and diversity. How does the standard story, the conventional paradigm explain all of that?

TODD WOOD: Well they would use evolution, right? So billions of years, random variations, all things that are alive now, that cactus, that zebra, the grass here, it's all related. We all go back to a common ancestor that lived billions of years ago and through the process of mutation and genetic variation and natural selection that's where we get the stuff that we have today.

DEL: So natural selection, what is it? Does it have the kind of creative potential that we need for all of this?

01:15:28
TODD WOOD: Natural selection is basically all about killing off things that aren't fit for the environment. So if you're a finch in the Galapagos and you have a really tiny beak and the only food available to you is really big, hard seeds you're going to die and that's exactly what we observe. And so we can watch over the generations as the beak size of finches change in the Galapagos. But they're still finches. They're still birds. The notion that natural selection can generate all of the diversity we see that's not been demonstrated. What we find

most often with natural selection is that natural selection does a lot of fine tuning. So right over here we've got these oryx, beautiful creatures and very, very pale colors. The wild range of the oryx is right on the southern end of the Sahara desert. And so you can see yeah their coloration makes sense. If you get a really dark colored one that's going to be really easy for predators to find and so they end up being these really beautiful light colors. And that's an example of where selection would take a variation and turn it into an adaptation.

01:16:36
DEL: And that brings us back to the notion that a really exquisite design in the beginning…

TODD WOOD: Oh I think so. Absolutely.

DEL: Has provided these creatures with the ability to survive and to change for their benefit.

TODD WOOD: Absolutely. So the ability to be able to change your coloration like that, to be able to fit in an environment that's got to be built into the system before it starts. Now don't get me wrong. That's a selection and random variation can do amazing things. It's pretty astonishing the kinds of changes that we can see but we don't see one kind changing into another. All we see are variations that happened within a created kind.

DEL: So the tree of life that we see in the textbooks, that is a picture that everything started from one thing and all of this diversity and exquisite beauty that we see came from that one trunk so to speak. Is that how you see it?

01:17:33
TODD WOOD: No, that's not how I would see it. I would say that you actually have a bunch of different trees. So there's a felid tree which has all the cats on it. There's the canid tree which has all the dogs on it. There's the ursid tree which has all the bears on it. There's the equid tree with all the horses on it. Each individual created kind then has its own individual tree so that you end up with something like an orchard or a forest.

DEL: As a scientist it seems what you're saying is that the Genesis paradigm answers all of this data better.

TODD WOOD: Ultimately I think it does because it embraces both similarity and difference. Now as we've already said there's lots of questions that are still out there but I'm pretty confident given what our paradigm can explain I'm very confident that those answers are going to be found.

DEL: Well that seems to be kind of the characteristic that we're seeing of the creationist scientist that we're talking to, that there is an underlying confidence there that the scripture is right.

01:18:33
TODD WOOD: Absolutely, yeah. The more I dig, the more I work at it, the more insight I get, the more answers I get, it's really exciting. It's really exciting. I can't imagine why young science students wouldn't want to do what we do. I mean it's some of the coolest research that you could possibly imagine.

DEL VO: After we left the zebras we made our way to the gorillas. Todd wanted to talk about the question of our relationship to apes and he brought some things along to show me. A skull.

TODD WOOD: So this guy is a Neanderthal. Very, very low forehead and we have really tall foreheads. The face, the mid face has been pulled out but at the same time well it looks very human. So that's Neanderthal. You want to hold that one for me?

DEL: Yeap.

01:19:27
TODD WOOD: We have others that are very different. Now this one is Australopithecus africanus. So you can see really no forehead at all. It just slopes right back. Very, very small brain case, mussel sticks way out so the face is sloped forward. What do you do with this stuff? I mean there's many more that we could show, many more pictures, many more skulls and you can see looking at them together they're really – there's a lot of difference there. Well here's the thing. So all that created kind stuff that we already talked about, I can show again and again and again with multiple studies that I can find a discontinuity between humans and non-humans. So this thing lands on the human side. This Neanderthal here it's one of us. This thing is not. It is different. But this would be just

another one of those varieties of living things that God made in the beginning and it survived the flood aboard the ark.

01:20:31
DEL: So when we look at Neanderthal man we're looking at a human but it's a human that just like we find in dogs we have a lot of variety of dogs…

TODD WOOD: We've got a lot of variety of people. So even looking back here at the gorilla we can see the obvious differences between us and him, not the least of which is that he's in there and we can go home when we're done.

DEL: And so those differences are really huge aren't they?

TODD WOOD: Yeah absolutely. The image of God entails this idea of being God's representative here on this earth. Part of that then is having dominion and having authority, a spiritual quality that we have that we don't share with animals like that.

01:21:17
DEL VO: Todd was right. It's obvious we're different from the rest of creation because we were made in God's image. We're the only ones who created zoos so we can see the beauty of God's animals. And we're unique in tracking time and wanting to know our own history. But how exactly do we track the passage of time? … (graphic) It was a beautiful night. Danny took me far outside the city and kept me up very late in order to show me something I will never forget. …

DEL: Oh my goodness, now you're going to make me buy a telescope. Well Danny beyond the beauty of what we see here do you see purpose for what God has done as well?

01:22:13
DANNY FAULKNER: We have some purposes given for the stars. In Genesis 1: 14-19 it's day four creation account, it mentions the stars and other heavenly bodies to mark time, to rule over the night, to be for signs, seasons, festivals and so forth. People have been using the stars for marking passage of time and we have the zodiac, actually those things have a useful purpose for reckoning time on small and long scales. Patterns repeat every night. They repeat every year. They come back in their season. There's a lot of regularity going on here. Originally at least the month is determined by the phases of the moon. On rare occasions the moon passes between us and the sun. It doesn't

happen very often and when that happens the moon just barely covers the sun up. If the moon were a little smaller or a little farther away it wouldn't do it at all. If it were larger or closer to us it would be grossly over total. And so these eclipses are spectacular and rare and this is the only planet on which it matters and it's the only planet on which it happens. I don't find that to be just a coincidence. I think there's more to it than that.

01:23:20
DANNY FAULKNER: But you can talk about the earth itself, the unique properties it has, its proper distance from the sun, the right kind of mass, the right kind of atmosphere. Water, water is probably the most common molecule in the universe. We see it all over the place. We see it in the atmosphere as cool stars. We also see it in interstellar medium, the stuff between the stars. We see them in satellites. We see them in planets. We see them in comets. We see it all over the place. But always where we see it it's either solid or it's a gas. So even though water is common in the universe the only place the universe where we know for sure that liquid water exists is on the earth. And you've got to think either that's just the way the world is for no apparent reason or the world is that way for a purpose and design. To me that speaks of creation.

01:24:08
DANNY FAULKNER: Okay, high over head here we have the great square of Pegasus. It's this big rectangle. Now coming off of Pegasus is a little fuzzy spot right there. Do you see that? That's the andromeda galaxy. That is the most distant object that you can see with the naked eye. It's a little, what we think a little over two million lightyears away and it contains a couple of hundred billion stars.

DEL: Okay Danny, that brings me to a big question and a big question on a lot of people's minds. If we have stars that are that far away, millions of lightyears away, and if the earth is young as we believe then how in the world can the starlight be here?

DANNY FAULKNER: Yeah. We call this the light travel time problem and I'll try to phrase it for you a little differently. We believe that the creation is only thousands of years old, say 6000 years, 7000 years, something like that. And I just pointed something out to you that we think is 2 million years away from us. I think those distances are reasonable correct and we

creationists need to answer this question and we've offered several solutions to that. I'll discuss with you my solution on this.

01:25:16
DANNY FAULKNER: Several things jump out at me on the creation account. One, there was a lot of process going on, very rapid process but still process. If you look at the day three account it talks about plants rising up out of the ground. It says let the earth bring forth these plants and the earth brought forth. I think if you would have been there it would have looked like a time lapse movie. Growth that might take normally decades taking place in a matter of minutes or hours at the most. Normal growth abnormally fast. I believe you can interpret one day of creation in terms of another day. So I turn to the day four account. Not much information is given there but I think God also rapidly made the stars and other astronomical bodies and then in order for them to fulfill their function to be seen he had to rapidly bring forth that light. Just as he brought plants and matured them quickly, he had to bring that light here. I'm suggesting we actually look at these objects like the andromeda galaxy we saw a few minutes ago, we're looking at light that actually left that object. So I think that rapid maturing took place.

01:26:18
DEL: Danny, are there some other things that you see that would point to a young universe?

DANNY FAULKNER: I think so. For instance spiral galaxies, the andromeda galaxy we talked about is a spiral galaxy. Our own is. And the inside of the galaxies should spin faster than the outside of the galaxy. So after a few rotations you wind up or smear out those spiral patterns. They should disappear after a few rotations. Now most astronomers think that spiral galaxies are 10 billion years old so why do we still see spiral patterns? You shouldn't see those and it's been long recognized as a problem. But if we look at the outer planets of the solar system, the gas giants, they all have rings. And we also know that these things are changing. They're wiping out. They've actually documented changes that have taken place within the ring system. You have all these gravitational tugs from the other satellites orbiting around. So these ring systems are fairly young. It doesn't prove that the solar system is young but it proves that these ring systems are young and that's interesting.

01:27:19
DEL: Well you've mentioned a lot of theories about the spirals and so forth, it brings us to what most people see as the big theory concerning cosmology and the universe and that's the Big Bang. How do you see that? Is it holding up over time?

DANNY FAULKNER: I don't think so. I think it's getting some problems so much so that more than a dozen years ago I think in the New Scientist Magazine there was an open letter protesting the Big Bang Theory and it's had hundreds of signatories since. And most people signing it are atheists, even creationists. So this idea that the Big Bang model is universally accepted is not true. There are many people out there, well known people, very famous physics and astronomy people that have real problems with the Big Bang and I don't see anyway that you can reconcile Big Bang with the Bible though a lot of people seem to think that you can. I think the temptation they have there is to try to interpret scripture in terms of the current cosmological thinking. That's nothing new. That's happened before as its turned out with disastrous results. So I think when you look at the history of science, the way we've discarded theories over time, we've had theories over supposedly beyond dispute and then later on discarding, when you see that lesson from history and then you want to way Genesis, you want to interpret Genesis in terms of a ruling paradigm, I think you need to be very careful.

01:28:45
DEL VO: I realized Danny was reorienting our perspective. We need to interpret the universe in terms of Genesis, not the other way around. And Genesis tells us that God created the sun, moon and stars to be a magnificent clock to track the passage of time. Even the ancients built towers to follow the stars. But what does Genesis say about those people and the languages they spoke? … (graphic) Doug took me to one of the best archeological museums in the world to show me some of the unique artifacts that relate to Genesis.

DOUG PETROVICH: Well the events of the Bible are unfolded in the ancient near east. So all of these lands are extremely important to understanding how and what took place in the Biblical text.

DEL: So this picks up these events we've been looking at in Genesis from creation and the flood and now we're to the dispersion of mankind out of Noah and his family.

01:29:49
DOUG PETROVICH: Exactly. And the dispersion would have taken place somewhere in this mountain range to the northwest of Mesopotamia and what we see in the Biblical text in the narrative is that a number of people have migrated down to southern Mesopotamia, the land of Shinar, and moved toward the process of urbanization, city living.

DEL: And that's the famous Tower of Babel.

DOUG PETROVICH: Absolutely.

DEL: Do we know where that is?

DOUG PETROVICH: There are about seven or eight babels, cities of babel in the ancient area of Mesopotamia. And so one at a time I've studied all of those areas and found only one that meets all the criteria of the famous sight of the Tower of Babel and that is the site of Eridu, which is in southeastern Mesopotamia. We have signs of the expansion to the north, to the south, to the east, to the west all the way as far as Egypt.

DEL: And when you say evidence, that is the artifacts that we find in these archeological digs?

01:30:49
DOUG PETROVICH: Exactly. There's an enormous amount and very specific kinds of material culture that attest to this expansion of people that I'm connecting to the post Babel dispersion. Here are the beveled rim bowls, these two, that rim brick that we see up there and those two spouted jars. All of these diagnostic forms of pottery and material culture they're found throughout the near east. The Bible describes an event that's not just the confusion of language but it's the dispersing of people far from that city because we see language or the written expression of language just pop up out of nowhere and then different languages being represented through cuneiform script or through hieroglyphic script or other means. So you do not have a universal plan that's followed among all of the languages. You see great diversity in the forms of grammar from language to language even in ancient languages.

01:31:52

DEL: It seems then that the event recorded in Genesis about the Tower of Babel, that's a very, very critical event for archeology.

DOUG PETROVICH: It is. So all of this fits perfectly with what we would see as the Biblical account of how languages took place. It's really the only way of explaining this. So the integrity of Biblical history ultimately is justified by the expression of these languages.

DEL: Now most of us think today of a tower the kinds of things we see in big cities with big straight walls. Is that what they were building?

DOUG PETROVICH: Well essentially it's a variation of a pyramid and there were four sides to it and several stairways that would go up to the top. At Eridu we have a temple that existed in 18 different phases and at every phase it grew in its size and its complexity. And that final temple, that final phase of the temple it was abandoned immediately right at the time of the late Uruk expansion. Cattycornered to the temple was an absolutely enormous platform.

01:32:58
DEL: Do you think that could be the foundation of the Tower of Babel?

DOUG PETROVICH: Absolutely. And I would suggest to you that this late Uruk expansion where this technology began was something that spread with the people. We find forms of these ziggurats all around the globe. We find them in China. We find them in India. We find them in various parts of the Americas. We find them all over.

DEL: Well obviously we have evidence here of civilization and people beginning to gather together in communities, even cities. Do we have any other evidence of that?

DOUG PETROVICH: Absolutely. We can move forward to the time of Abraham because we know that Abraham lived at the site of Ur, which was also in southern Mesopotamia at the end of the third millennium BC.

DEL: That brings us to the end of Genesis chapter 11.

DOUG PETROVICH: Exactly. In fact you see some pottery, some cuneiform tablets all dating to the period of the third dynasty or Ur.

DEL: So Abraham would have been using pottery similar to what we see here.

01:33:58
DOUG PETROVICH: These would have been the forms that he knew about and that he would have used and he would have seen in his day.

DEL: It's amazing just as we're sitting here thinking about that, thinking about Abraham and that this represents the culture and the civilization that he lived in. It's a great tie to that record in Genesis.

DOUG PETROVICH: It is fascinating and it gives you a feeling of putting your hands around the events that go on in the Biblical text.

01:34:24
DEL VO: While we were at the museum, Doug showed me other cultures that were recorded in Biblical history, from the Egyptians to the Assyrians to the Babylonians. When I looked back through history I realized each of these cultures had been impacted by the events recorded in Genesis. But what is the importance of Genesis to us today? … (graphic) George met me at a place near this home where we could see the beauty of God's creation. He said there was a good reason God started our history in a garden.

01:35:00
DEL: George, when you see what's happening in our culture today, do you then tie it somehow back to our view of Genesis and that early historical account?

GEORGE GRANT: One of the things that you see in Genesis chapter 1 is the structure for time. The universe was created for a 24 hour day. And so everything from the way our sleep cycles and the way our work cycles work all come from that definitive historical account there. When we get to Genesis chapter 2 we start to see the meaning and purpose of man. Of course in Genesis chapter 3 we see the disruption of everything by the fall. And the implications of a historical fall, an actual man

and an actual woman who actually yielded to actual sin have then implications all through the rest of the Bible.

01:35:59
DEL: So there's something deeper associated with what happens to a culture, to one's worldview if you remove a literal Adam and Eve. Is that what you're saying?

GEORGE GRANT: Absolutely. If you remove a literal Adam and Eve, that changes the whole shape of what history is and how history is remembered. The apostle Paul understood the events of the early chapters of Genesis as formative not only for our understanding of history but for relationships between men and women and their children, the character and nature of marriage, rightness and wrongness in moral relations including sexuality. All of that is assumed from those early chapters of Genesis, often times quoting the passages verbatim.

DEL: It seems that even Peter is taking that event of the flood for example as a historical event and laying it in the context of what he's pointing to a judgment that will come. So even judgement is a part of understanding that historical record.

01:37:11
GEORGE GRANT: And if you take away the metaphor that Jesus and Peter both used of the flood as a way to understand the doctrine of salvation, you start to lose a grip on everything that the Bible is intended to show us, to teach us and to shape in us.

DEL: I think most Christians when we talk about for example the life of Christ, those are understood to be historical accounts. Why is it that when we look at the account in Genesis that we have a tendency not to want to do that?

GEORGE GRANT: We have a tendency not to do it because we're constantly exhorted to not see it that way.

DEL: From the culture around us?

GEORGE GRANT: The culture around us, from theologians, modern theologians who are trying to somehow in their minds fit the truths of scripture with the so called discoveries of science, which if you know anything about the history of science you know it's an incredibly unreliable path. So we're constantly bombarded with this message that we have to adjust our view.

01:38:22
DEL: But I think there are a lot of Christians who have a sense that the historicity of Genesis is just not that important to their Christianity.

GEORGE GRANT: I think we've been sold a bill of goods on that. I think that when you rid the book of Genesis of its historical moorings you have suddenly decapitated the whole structure of the Bible. When you somehow make those chapters a different category altogether and non-historical, what are you doing to all the rest of the Bible – the Bible that assumes that it's true, the Bible that treats it as historically true, the Bible that refers back to all of the characters that are there. Does that then negate the whole of the Bible? Well yes, and that's exactly what the strategy was of the higher critics in the 18th and 19th centuries. They knew if you could somehow attack the first three or the first eleven chapters of Genesis you've done away with the whole thing.

01:39:34
DEL: Well George, all of this brings us back then to the notion that the history that's recorded in Genesis or any true history at all is critical for us in terms of understanding what's going on around us.

GEORGE GRANT: Yeah. In fact it reminds us of how important history is in anchoring all of the other human disciplines. It is history that helps to inform science so that science can begin its journey of discovery in the world. So what history does is it tells us what happened. Then what science attempts to do is it asks the question well how did it happen? And then it begins to explore the how, the mechanics, the structures that were present in those events. If you try and reverse that, if you try and make science saying what actually happened then you wind up having a worldview that is constantly shifting where nothing is certain and moral relativism is that necessary outcome.

DEL: And God has given us that bedrock. He has given us that foundation in that historical record.

GEORGE GRANT: He's given it to us in that historical record going all the way back to Genesis chapter one back to the garden.

01:40:59
DEL VO: In the end I suppose we always return home and for me home is Colorado. I always think more clearly when I'm out in the beauty of God's creation. We've been a lot of places and seen a lot of things but considering everything together it's clear that nothing in the world makes sense except in the light of Genesis.

DEL: I love being in the mountains, especially ones like these. They help give us a good perspective, help us realize that we're small and finite and vulnerable. They humble us. And we need to be humbled because we're prone to be wrong because we have a tendency to base our ideas on our own small set of experiences. That's why the wisdom of the ages has told us over and over again to know history. Everything that we have done up to this point has looked at the evidence that shows us that the word of God, the history that has been laid down for us in Genesis is true. God created the world in six days. There was a real Adam, a real Eve. There was a real fall. There was a real flood that destroyed the world and produced all of this. It is glorious but it represents the judgment of God. Everything supports what God has told us. Genesis is history, true history.
01:42:35

01:42:36 (helicopter pan of mountains)

01:43:05 END

FADE OUT.