Has the Big Bang Been Disproven? with Stephen C. Meyer

(September 2, 2022)

Did the Big Bang not happen? The James Webb Space Telescope, some are suggesting, is saying it didn't happen. Is that really true? Well, we're gonna get to that later in the program. Before however, I don't know if you ever read Newsweek recently, but Newsweek is not a Christian publication, as you may know. Yet, on July 14 of this year, there was an article called How Science Stopped Backing Atheists and Started Pointing Back to God. And the author of that article is the great Stephen C. Meyer ladies and gentlemen, who was on the program with us today. You know, Steve has been on this program quite a bit. His latest book, as you know, is called Return of the God Hypothesis.

And this article actually went through - we're gonna see what's in the article here in a minute, right from Steve - it went through some of the material in a truncated form that is in his book, Return of the God Hypothesis. But there were atheists that took a lot of consternation to this and we're gonna throw some of the objections the atheist said about Steve's points and have him respond to them. So, let's just bring Steve on the program right now. Steve, how are you up there in the Great Northwest?

Steve:
I'm doing really well. We're having a lovely summer here. And it's great to see you, as always.

Frank:
Now, how did you get an article in Newsweek, of all places? I mean, this is a pretty big publication. How did this happen?

Steve:
Well, I submitted it to their op-ed page and the editor got back to me within 45 minutes and said, Yeah, I think I'd like to run this one. So, I don't exactly know how other than we just submitted it over email.

Frank:
Well, the article starts out by talking about how fewer people now believe in God. There's still a majority that do quite obviously. Why do you think, in today's day and age, fewer and fewer people are believing that there is a God, Steve?

Steve:
Well, we actually have probed that. I started the article by talking about the Gallup Poll, which shows that there has been a precipitous decline in the percentage of people who believe in God in the United States. It's still a very high number; it went from 90 some percent to 80%, but only in a in a decade. That was a very steep drop in a decade, right. We've done some polling at Discovery Institute to try to get behind that number and find out well, why are people rejecting God, and we found that the perceived message of science is one of the main factors for people rejecting God. 65% of professing atheists say that the findings of science make belief in God less probable. For agnostics, that number is in the 40s. 43% say that the findings of science make God less plausible.

And when we gave people a list of factors that were relevant in their decision to reject belief in God, the idea of undirected evolution was cited by 65% of the people who no longer believed in God, more than the number of people who cited pain, suffering, or disease. So, clearly, the message of what we not so long ago called The New Atheists has been penetrating the culture. These are the people like Richard Dawkins, Lawrence Krauss, Sam Harris, the folks who are arguing that science properly understood undermines belief in God. And so, I think that is a big part of the reason here. Essentially, science is the discipline that discusses the facts of the matter. What are the factual claims about the world? And increasingly, the message is getting through that the facts that we know by our scientific study is making belief in God less plausible. So, that's a big part of it.

Frank:
That's what the general public thinks. And of course, we like to say on this program that science doesn't say anything, scientists do. And it turns out that many of the scientists that the general public are listening to are atheists philosophically. And it doesn't matter how much the evidence points towards intelligence, they're never going to consider that an option. That's why there are so many people who, well at least one particular person I've been looking at, that

took a lot of consternation to your article in Newsweek, Steve. We'll get to him a little bit later in the program. But what evidence do you see? I mean, you have a PhD from Cambridge in the philosophy of science. That is your degree, correct, the philosophy of science?

Steve:
Philosophy of science. And I did a PhD on origin of life biology, which is about one of these big questions of you know, how everything got here. In fact, the number one reason cited was the theories of undirected biological and chemical evolution. Those theories make many, many people, 65% of professing atheists, they cite that factor as one of the things that causes them to reject belief in God. And it's not hard to see how people would come to that view, because, as you say, the scientists who are speaking in the name of science - I mean, we have a whole class of, of celebrity scientists, who are speaking in the name of scientists, and they're advocating atheism. And we have, you know, Richard Dawkins. The late Stephen Weinberg, the late Stephen Hawking got into this act, Lawrence Krauss, Bill Nye the Science Guy, who's not actually a scientist, but he plays one on TV.

So, you have this kind of persistent messaging that science makes belief in God untenable. But as you say, and this was the point of my Newsweek piece, that this is not only an unnecessary to conclusion to draw from science, it's exactly the wrong conclusion to draw from the great scientific discoveries that have been made over the last 100 years about biological and cosmological origins; about where the universe came from, about how it got finely tuned to make life possible, and about where life came from. The major discoveries relevant to those big questions, those big scientific questions that also have worldview implications, those discoveries have been very theistically friendly. They're pointing to an intelligent designer, and indeed, one with the attributes that Jews, and Christians have long ascribed to God.

Frank:
Now, that is what the book says, Return of the God Hypothesis. And Steve, you only get about 800 words in a column to actually put forth a book that is over 500 pages. You're just kind of summarizing you. You got about one word per page, Steve, to try and summarize what's in the book. Why don't we start with the cosmological? That's the first question of origin that everybody's looking at: Where did the universe come from? What evidence do we have that

the universe had a beginning? Why don't we start with the evidence the universe had a beginning. We've got a couple of minutes before the break.

Steve:
Fantastic. I mean, this was the shocking discovery of the early part of the 20th century. In the 19 teens and 20s, astronomers discovered that the light coming from very distant galaxies was being stretched out so that it was shifted towards the red end of the visible light spectrum. So, this redshift of light - if an object like in the Doppler shift, we know if a train whistle is moving away from you, the pitch of the sound of that train whistle is going to be lower and it's going to drop in pitch as the sound waves are stretched out. The light waves coming from distant galaxies was doing the same thing, and is doing the same thing, and that indicated a recessional velocity of those distant galaxies. And if all the galaxies in every quadrant of the night sky are moving away from us, the most logical thing to conclude is that the universe is actually expanding, that space is expanding and driving the galaxies away. And that was also a conclusion of Einstein's theory of general relativity.

And so, by the late 1920s, there was this convergence of testimony between theoretical physics and observational astronomy suggesting that we have an expanding universe outward from a beginning point. If you wind the motions of the galaxies backwards in time, in the forward direction of time they're moving away, but as you move backwards in time, at every progressive point in the remote past, the galaxies would have been closer and closer and closer and finally would have converged on a point where the expansion would have started, and arguably, where the universe itself would have come into existence.

Frank:
And that's what we're going to talk about a little bit more after the break you're listening to I don't have enough faith to be an atheist with me, Frank Turk on the American Family Radio Network. My guest is Dr. Stephen C. Meyer, author of Return of the God Hypothesis. Back in two minutes.

If you're low on the FM dial looking for National Public Radio go no further. We're actually going to tell you the truth here. You will not hear this on NPR. Trust me. You're listening to the American Family Radio Network. My name is Frank Turk. The show is called I Don't Have

Enough Faith to Be an Atheist. My guest today, who is really a problem for many atheists around the world, is Stephen C. Meyer. New York Times best-selling author of many books; Signature in the Cell, Darwin's Doubt, the new one, Return of the God Hypothesis, and also the author of a Newsweek article that came out in July called, How Science Stopped Backing Atheists and Started Pointing Back to God, which has caused consternation among atheists out there in the blogosphere. We'll get into it.

But before the break, Steve, you were talking about the redshift in the light that seems to show that the galaxies are moving away from us, implying that if you went back in time all the galaxies would collapse back to a single point, a point of infinite density called a singularity, which would actually be nothing, non-being. And then the entire space time continuum somehow leapt into existence, which for us anyway, seems to imply a theistic result. However, the James Webb Space Telescope brought back images recently, and some people on the web have been saying, Oh, this somehow now disproves the Big Bang. Particularly even the redshift is now somehow disproven. What do you say about that?

Steve:
Well, that is actually is completely incorrect. This is the pet view of one particular astronomer named Learner. And the thing that's not been reported in many of the news reports about this, what the James Webb Telescope has found, which is anomalous and unexpected, is that there are more galaxies very early on in the universe than we expected. Based on our theories of galaxy formation, it appears that galaxies are forming faster than we would have expected based on our understandings of the synthesis of the materials out of which galaxies are formed. However, the redshift evidence that is the key to understanding whether or not the universe is expanding, is exactly what we would have expected.

And here's the basic idea of the James Webb Telescope. The James Webb is looking for light coming from very distant galaxies that are very, very old. And any light that's coming from the very far away is going to be shifted, it's going to be stretched out further than galaxies that are closer at hand. And because of the galaxies that they're looking for, some as far back as 300 million years, even 250 million years after the Big Bang itself, the light would have been traveling a long time would have been stretched out very, very far because of the expansion of space that would have occurred during that long period of time. So, we wouldn't be finding

light from those galaxies in the visible light spectrum. To find that light, you'd have to look in what's called the infrared spectrum where you have very long wavelengths. And the James Webb Telescope has been built specifically to detect that kind of light.

In fact, what they've done technologically is they've cooled the detection equipment to a mere seven degrees below absolute zero. It's something like 448 degrees below zero Fahrenheit. And the reason they do that is that if the instrument were warmer, it would itself emit infrared radiation, which would interfere with the radiation that they're wanting to detect. So, what they've done - it's super clever technology, it's floating up there in orbit, in space, with the detection equipment cooled to minus seven degrees, minus seven Kelvin. And they are getting images from these very distant galaxies.

Now, they could not be getting those images if that radiation was not in the infrared range. That's what they're looking for. So, the fact that they've gotten the infrared radiation coming from these very distant very far away galaxies, shows that those very distant very far galaxies are emitting radiation that has been uber redshifted to the degree that would be expected given the distance and that they are away from us and the time it would have taken for that light to travel. So, the very fact that they're getting the radiation in the infrared range., and that we are therefore seeing those galaxies through the James Webb, confirms that we're getting the degree of redshift that we would have expected, given the amount of time that has elapsed since those galaxies were formed.

Frank:
So, these galaxies are moving away faster, the further they are from us. And that's what we would expect if the Big Bang cosmological model was true. However, this astronomer by the name of Learner - I read the article that he wrote about this - he said he could explain the redshift by something called tired light, I think he said. What's your response to this?

Steve:
At the beginning of this, of your question, you said something very important that I should have said earlier, when, when, when Hubble and Harmison and the astronomers in the 1920s were first detecting the redshifted light coming from distant galaxies, they also discovered a rule or a law, and that is, the further the galaxy is away from us, the faster it's expanding it, the faster it's

moving away. So, the further the faster. And so, the galaxies that are 13.5 billion years old and as far away as would correspond to that age should have light that they would be moving very fast. And the light coming from them would be what I've coined the term uber redshifted. It shouldn't be redshifted; the light should be really stretched out. And the James Webb is looking for light which is super uber redshifted. That's very stretched out. And the very fact that they have confirmed galaxies of that age shows that they're getting the degree of redshift that you would expect given the distance to them.

Now, Learner's claim that he can explain that degree of redshift through tired light, is a tacit admission that the James Webb Telescope is detecting the degree of redshifted light, or electromagnetic radiation, that would be necessary to confirm the Big Bang model. What he's done is recycle an old auxiliary, or ad hoc hypothesis, which attempts to explain the redshift in Toto, not just the light coming from the James Webb, this would be an explanation you need to offer to explain away all redshift as having nothing to do with the expansion of the universe. And it's called the tired light hypothesis. And it's the idea that, well, the light isn't being stretched out because the galaxies are moving away, it's just getting tired and it's starting to vibrate at a lower frequency and a longer wavelength because it's running out of energy, if you will.

Now, there are a number of problems with that, from the standpoint of physics, that have caused the overwhelming majority of physicists to reject this idea. It was first proposed as something to support the steady state hypothesis by Fred Hoyle and others. But the main one is that there is no known mechanism that can degrade a photon's energy without also changing its momentum. But if the momentum of the photon changes, then it should have a blurred appearance that we could detect once we detected the light. And we're not seeing that kind of blurring in any of the light coming to us, either when Hubble and Humason made their observations in the 1920s, or when Sandage made his observations in the 50s and 60s and 70s, or in these more recent observations of the James Webb telescope. So, that's a kind of critical test of the tired light hypothesis. And there are others as well. Other problems that predictions that a tired light hypothesis would make that have not been confirmed by physical observations.

Frank:
So, the tired light hypothesis is tired and old and doesn't hold up.

Steve:
But also note that that learner would not have invoked that had the James Webb not detected the type of uber redshifted electromagnetic radiation that is the prediction of the Big Bang model. He only invoked it because he had to explain away why the James Webb, like all other observations, have revealed this type of redshift, the elongation of electromagnetic radiation that you would expect on the hypothesis of an expanding universe outward from a definite beginning.

Frank:
But the redshift, Steve, as you point out in Return of the God Hypothesis, and you may have even mentioned it in the article in Newsweek, is not the only evidence we have for the fact that the universe had a beginning, from a scientific perspective. There's also the radiation afterglow, or the remnant heat from the Big Bang explosion. And there's the second law of thermodynamics which stands regardless of whether or not we have radiation, afterglow, or redshift. The universe can't be an eternal from a scientific perspective, due to the second law of thermodynamics. Why don't we start however, with the radiation afterglow? What is that and why does that show there literally was a beginning?

Steve:
Well, the technical term for that is the cosmic background radiation, or sometimes abbreviated CMBR. And this was discovered, it was a prediction of the Big Bang. George Gamow, another physicist, predicted this in the late 40s. The idea was there were two models in play. One was the steady state, the idea that the universe, yes, it's expanding, but it's been expanding for an infinitely long time, and new matter is popping into existence as the universe stretches out. And so, on the steady state model, you would never have expected that all of the mass energy of the universe would have been concentrated into one point. Instead, the idea was it was popping into existence in little bits, as the universe stretched.

Hoyle proposed that the universe must have a constant density and if the universe is stretching out, then to maintain the constant density, there must be some creation force, he called it,

bringing matter into existence...pop, pop, pop...but never all the matter in one place. The Big Bang model, however, predicted and anticipated that as you went back in time, the mass energy of the universe would have become more and more densely concentrated until you reach that point of near singularity at the very beginning. And therefore, if all that radiation matter and energy was concentrated in that way, at the beginning, there would be an afterglow of that. There would be energy that would be dissipating from that initial state and filling the universe as it expanded.

And there were even calculations made as to the blackbody signature, or you could think of it as kind of the temperature equivalent of that radiation. And in 1965, two Bell Labs engineers, Arno Penzias and Robert Wilson, inadvertently detected that energy. And that was really the decisive blow against the steady state and another hugely unexpected confirmation of the Big Bang Theory. And of course, nothing that the James Webb Telescope has detected has overturned that evidence either. In fact, as we said before, the redshift is exactly what you'd expect. So, you've got two really strong pieces of evidence that stand in support of the Big Bang.

Frank:
How do atheists respond to this? We'll be back in two minutes. Don't go anywhere.

If you'd really like to know that the New Testament documents are reliable, and you want to take a detective's approach to figure it out, you need to join Cold Case Christianity, the online course with the great detective J. Warner Wallace. The course has just begun, but the first zoom session isn't until next week, so you can still join it. If you go to CrossExamined.org and click on online courses, you will see the course there. It's Cold Case Christianity; The Case for the Reliability of the New Testament Gospels, with J. Warner Wallace. As you know, Jim is a cold case homicide detective. He's been on this program several times before. He takes a really unique approach to the New Testament, one that I think you'll find very compelling. And if you take the premium version of that course, you will be in several live zoom sessions with Jim himself for Q&A, so check that out.

Then a little bit later in the month, beginning September 26, I'll be teaching the Why I Still Don't Have Enough Faith to Be an Atheist class. And Shanda Fulbright will be teaching the sixth to

eighth grade version of that class. It's called Let's Get Real: Examining the Evidence for God. So, if you've got young people who are homeschooled, or in a private school and they just want to know that Christianity is true, they want to take the same method we use to show that Christianity is true in the I Don't Have Enough Faith to Be an Atheist material, this is just more age appropriate. Check it out.

Let me go back to my friend, Steve Meyer, who wrote the great book, Return of the God Hypothesis, and he also has a recent article in Newsweek about this. Well, as you could imagine, some of the atheists were very upset that Steve, Stephen C. Meyer, would have a platform in a liberal magazine like Newsweek to put forth the evidence for God. And one of the people upset is Jerry Coyne, who has a blog called Why Evolution is True. And he has an entire piece on this, Steve. We don't have time to go through the entire response he has, but how he responds to your points about the Big Bang, is he starts quoting actually the King James Version of the Bible in Genesis one. In the beginning, God created the heavens in the earth, and then he goes through all the days, and he says, Well, this doesn't line up with the Big Bang. How do you respond, Steve?

Steve:
Well, it's an obvious confirmation of the biblical account. That is the Big Bang model provides an obvious confirmation of the most important claim in the biblical account, which is that there was a beginning to the universe. Arno Penzias, who knows a lot more about cosmology than Jerry Coyne, who received a Nobel Prize for his discovery of the cosmic background radiation, has said that the best data we have are exactly what I would have predicted, had I nothing to go on but the first five books of Moses and the Bible as a whole. And I think he's, not only referring to the first verse of the Bible, which affirms that there was a beginning - in the beginning, God said - but you find multiple times in the Tanakh, in the Hebrew Bible, in the prophets and the Psalms, the affirmation that God is stretching out the heavens, or has stretched out the heavens, either one. And both of those things turn out to be absolutely true, as we've discovered that the universe is expanding. So, there is an interesting convergence between the biblical cosmology and the cosmological theories of modern astrophysics.

Frank:
Listeners might say, well, the first few verses of the Bible show there was a beginning, but some of them will say, Steve, Well, it seems to show a young beginning because if you add up all the days, you're gonna get 1000s of years rather than billions of years. How might you respond to that claim?

Steve:
Well, I don't think the Bible teaches a young earth. I have a hybrid view of that question. I think that the universe is very old, and that anatomically modern humans, our species, is relatively young. But if you go to day four in the Bible, you learn that the text says that God either created or caused to appear the sun and the moon and he gave them as markers of the days and the seasons. So, prior to day four, the ohms of creation have been established before we have any means of keeping track of time the way we do now. We count a day as the movement of the sun across the ecliptic.

Well, if we cannot see from planet Earth or point sources of light, including the sun and the moon, we have no way of keeping time the way we do now, so we have to be very careful not to impute our conceptions of time or our metrics for keeping time onto the ohms of creation. I think the biblical account is, in a sense, age neutral. It doesn't tell us one way or another how long the days of creation are. And I think we do have to look to scientific evidence to settle that question. So, I don't think it's a departure from respect of the scriptural revelation to affirm that the Earth, or the universe, might be very old indeed. I think we have to look to the evidence from science to find that out.

Frank:
It's interesting to that Augustine didn't think that the first chapter of Genesis told us the age of the universe. This is long before there was any scientific knowledge on this question. And there are many other ways of looking at this. I think John Lennox has done a very good job in his book, Seven Days That Divided the World, so if you guys are interested in the age question, you might want to check that book out.

Steve:
That's a very good book, Frank, and I would also recommend the work of Jack Collins, a professor at Covenant seminary who's for Christians out there with thinking about biblical issues, they would be reassured to know that he's a sort of rock ribbed high view of Scripture guy but based on the Hebrew language, he comes to the conclusion - he's often asked: Are the days of Genesis old Hugh Ross days or young Ken Ham days?

Frank:
Right. What does he say?

Steve:
Neither. They're days of indeterminate length from a human point of view. We don't know because we don't know how long the days of creation are, because we don't have time markers by which we can assess that until we get to day four. So, the days of creation are established prior to all that.

Frank:
Let's now go to what Coyne says after that, after he quotes Genesis and says, This is a terrible way to try and describe how the universe began, even though we would say Coyne is wrong on that. He cites naturalistic alternatives for the origin of the universe. He says it's very clear that the Big Bang did occur, however, there are other ways of trying to discover whether or not he says, Let me just read what he says. "Now, there's little doubt that the Big Bang occurred. The question is whether this is how our present universe began and whether there are other universes originating in similar other ways.

So, he goes to talk about quantum fluctuation, even brings up Krauss. In this regard, Krauss's model has been completely debunked. He talks about brain models and eternal inflation in which different universes are created at intervals. There's the multiverse issue. He says, If you ask most cosmologists, they'd sign on to the Big Bang, but whether that completely describes the origin of our universe or is an incomplete description of our universe if there are other universes, is something we don't know. So, we just don't know, Steve, we just don't know. What do you say?

Steve:
This is special pleading. It's a naturalism of the gaps here. The models he's referring to, first of all, inflationary cosmology may involve an eternal universe into the future, but it's finite in the past, so we can dispense with that very quickly. It had a beginning, the idea that our universe might be one of many universes in an eternal cycle of expansion and contraction, he clearly doesn't know very much cosmology because he doesn't actually describe the models with any precision. But what he's referring to there is something called the oscillating universe where you have the universe expanding, contracting, expanding, contracting, expanding, contracting, ad infinitum.

And that's been refuted for a number of reasons, the most important of which is there is not enough mass in the universe to cause a re-collapse, number one. But number two, maybe actually more important, is the consideration of the second law of thermodynamics. Alan Guth, the great physicist from MIT, showed in the 1980s that the oscillating universe, even if true, would imply a beginning. Because he showed that with each successive cycle of expansion and contraction, there would be a buildup of entropy, dissipation of the orderliness of matter, and therefore less energy available to do work with each cycle. And so, if the universe had been around, it'd be like a bouncing ball bouncing a little less high with each cycle until it finally damped out and settled to the ground.

And so, the conclusion is that if the universe had been around an infinitely long period of time, then we would have had time for an infinite number of cycles and we would find that we would already be at a point of heat death where there would be no energy available to do work. All the energy would be dissipated, we'd be in a cold universe, and there would be no more cycles of expansion and contraction at all. But since we don't live in a universe which is in a state of heat death, and which is neither expanding or contracting anymore, we can conclude that the universe is not infinitely old and instead it had a finite beginning. And I deal with this extensively in the book.

Finally, the Lawrence Krauss model, which is the model of so-called quantum cosmology, is really a curious thing. It acknowledges the existence of a singularity at the beginning. Actually, and it's not Krauss who is the source of this, Krauss is popularizing Alexander Vilenkin. And the Vilenkin said something very profound about... This is the idea of using quantum mechanical

equations to try to explain where the universe came from. And a fundamental problem with this whole approach is that it requires invoking a pre-existing mathematical state out of which matter, and energy arise somehow. But yet in our uniform and repeated experience, math does not generate matter and energy, math merely describes what matter and energy do once you have them.

And so, even Stephen Hawking said, Well, what puts fire in the equations that gives you a universe to describe? He also was a proponent of a quantum cosmological model. And Vilenkin, whom Krauss is popularizing, is seeing the same the same exact problem and he says, In our experience, math describes matter and energy. He goes further and says, Mathematics in our experience exists in a mind. If we're saying that math pre-exists he universe, are we really saying that there was a mind before the universe? So, these quantum cosmological models, which are the most popular alternatives to a cosmological argument based on the Big Bang, they're kind of an atheist go to strategy now to invoke quantum cosmology. But the most perceptive advocates of these views have seen that they too have theistic implications, the action of a mind before matter.

Frank:
Hold that though. We're gonna come back to that. So, the atheists are saying math was before creation. That sounds like a mind. Anyway, we're talking to Dr. Stephen C. Meyer. His book is Return of the God Hypothesis and an article in Newsweek as his talk, and we're back in two minutes, don't go anywhere.

Ladies and gentlemen, if you're not a subscriber to our YouTube channel, why not? We've been putting out a number of YouTube shorts. These are very short videos and a lot of them really are getting a lot of use. We have one approaching 2 million views and it is Where Did the Laws of Nature Come From. In fact, I just sent that out in an email to our email subscribers. And if you want to get one email from us a week, with a short video that can help you defend the faith, go to cross examined.org click on subscribe to our list, we don't sell your email address to anyone else. We don't give it to anyone else. It's just inside our organization here and Online Christian Courses, the group that does our courses. Those are the only people you're gonna get email from. So, if you want to be a part of that, just hit Subscribe on the CrossExamined.org website.

My guest today is Stephen Meyer. Steve, this little video that we have on YouTube, Where Did the Laws of Nature Come From, really is exactly the question that Alexander Vilenkin is trying to answer when he's trying to figure out where the universe came from. So, you have you have the exact quote from Alexander Vilenkin, the Russian cosmologist from Tufts University, who wrote the book Many Worlds in One. What does he say about this?

Steve:
Yeah, absolutely. Let me just put this into a little bit of context because Coyne is invoking the authority of the quantum cosmologists to refute the cosmological argument for theism that many theistic philosophers and scientists have made as a result of the discovery that, as best we can tell, the universe has a beginning. Quantum cosmology attempts to use the mathematical apparatus of quantum mechanics to describe the origin of the universe, and it does so in part, because when the universe was super, super old, it was super, super tiny and quantum mechanics is the mathematics, the physics of the very small. Okay?

But there's a kind of strange paradox that arises in this attempt, because they're attempting to explain the origin of matter, space, time, and energy. And the argument is that the laws of quantum mechanics applied to the early universe, a so-called quantum theory of gravity, somehow explains how the matter, space, time, and energy come into existence from these mathematical laws of physics. But Vilenkin raises this question. He says: Well, wait a minute, before there was matter, space, time, and energy, what tablets were these laws written on? Because the laws of physics describe matter and energy in space and time. They don't explain where matter and energy come from. They're not causal agents. They aren't things, actually, they're descriptions of patterns of behavior that we see in the natural world of matter and energy.

So, there's this amazing quotation near the end of his book, Many Worlds in One, and I was I was alluding to it before, but let me let me just read it. He says, "Does this mean that the laws of physics are not mere descriptions of reality and can have an independent existence of their own? In the absence of space, time, and matter, what tablets could they be written on? The laws are expressed in the form of mathematical equations. If the medium of mathematics is the mind does that mean that mind should predate the universe?

Frank:
Hmm.

Steve:
And of course, I think that's exactly what it implies because our experience is that mathematics is something that is a mental construct. And so, if you're saying that math produces matter, on the basis of our uniform and repeated experience, you are tacitly affirming a mental, not a material cause for the origin of the universe. And so, this whole quantum cosmological model, I think, has tacit theistic implications, and for some other reasons that would take a little bit more time to explain, which I do explain extensively in the book. So, when Jerry Coyne just throws out a reference to Vilenkin, or Krauss, or someone like that, he's in no way refuting a cosmological argument for the existence of God, based on either the observational evidence or the theoretical physics that has been done to try to capture what we know about the origin of the universe.

Frank:
Now, Alexander Vilenkin is an agnostic, and in that book, Many Worlds in One, a book in which he tries to say it could be true that there's a multiverse out there, I think he also says this, Steve, that even if there is a multiverse, there is an absolute beginning to all of this. But that question that he posed right at the end of that quote, that you just read, he never answered, did he?

Steve:
No, he raises it as a rhetorical question, but he leaves it hanging at the very end of the book, right. And Hawking, as I mentioned, tumbled to the same uncomfortable conclusion because Hawking was very explicitly trying to use quantum cosmology as a refutation for any theistic implication or inference that someone might draw from the discovery that the universe has a beginning. Hawking played a particularly important role in proving that the universe has a beginning, as best we can tell. He solved the field equations of general relativity and as a PhD student, he was doing black hole physics and thinking about, Well, what happens to the universe at different stages, as far as the concentration of matter is concerned.

He knew that the astronomers were saying that as the universe expands, matter and energy become more and more diffused, more dissipated throughout the universe. But he also knew that if you back the timescale up and began to think about what the universe would have been like at any progressive point in the finite past, that it would have been more and more and more dense. And, finally he knew, from Einstein's physics, that massive bodies curve the fabric of space time. So, if you go further back in time, and as matter gets more and more densely compacted, then space gets more and more tightly curved, and you eventually reach a limiting point, a limiting case, where the density of the universe becomes so tightly compacted, that space becomes so tightly curved, that you can't go back any further. That you reach a point of maximum curvature, or infinite curvature, corresponding to zero spatial volume. So, the picture of the universe, based on general relativity, is a picture essentially of Creatio ex nihilo, that the physical universe comes into existence out of nothing, that everything emerges out of nothing in an instant.

Now, that was a very uncongenial conclusion for Hawking personally because he was inclined toward an atheist materialist worldview. And so, though he proved the singularity theorems later with Penrose and Ellis, he spent much of the rest of his career looking for a loophole, as it were, and his loophole was quantum cosmology. But what I show in Return of the God Hypothesis, that whether you adopt Hawking's model, or Vilenkin's model of quantum cosmology, number one, they never get rid of the singularity at the beginning. And number two, there's this profound problem of the reification of math. They treat the math as if it's a thing that can cause something to happen, when we know that math is only used by minds to describe what does happen. And so, there's a tacit implication of a prior mind if their model is true.

Frank:
We often asked the question on this show: Why is the universe describable by math? Why can we use our three pound brain and do math equations, and this applies to the world outside of our skulls? That appears to be the product of a mind. I think the Vilenkin's admitting that. Hawking was essentially saying the same thing when he said, Who breathes fire into these equations?

Steve:
It gives them a universe to describe, though equations don't cause things to happen. It would be like saying the longitude and latitude lines on a map cause the Himalayan mountains to rise. No, they allow us to map where it is, but they don't cause it. These are descriptors and they're descriptors in our minds. If they have any reality beyond our minds, it must be a reality in the mind of God. It makes no sense to talk about the laws of physics as mathematical entities causing material things to happen.

Frank:
Steve, we're gonna come back next show, if you can come back, and talk about fine-tuning and the origin of life, those kinds of questions, because we ran out of time in this program. But let's just review for our audience the evidence that the universe did indeed have a beginning. First of all, there's philosophical evidence, which says there can't be an infinite number of days before today, otherwise, today never would have arrived. That seems airtight to me. But let's just review the scientific evidence. We've got the second law that shows that the universe can't be past eternal in terms of energy. Just give us a nutshell on that.

Steve:
Yeah, that's the thing I was talking about with respect to Alan Guth. And the refutation of the oscillating universe model is that, if you have an oscillating universe, with each successive cycle you have an entropy build up and a loss of energy available to do work, so eventually, each one of those cycles is going to damp down. Since we don't live in a universe that is evidencing a heat death, then we haven't been around it for an infinitely long time.

Frank:
Alright, so that's the second law. This is all in Return of the God Hypothesis. We spoke about it too in I Don't Have Enough Faith to Be an Atheist. Then we have the fact that the universe is expanding. The redshift, we talked about that.

Steve:
Recently confirmed by the James Webb Telescope, the impression that you might have gotten from media reports.

Frank:
Right. In fact, the radiation afterglow, or the cosmic background radiation, that shows that there was a great explosion. And then Einstein's theory of general relativity as well.

Steve:
Well, the singularity theorems that were proven on the basis of Einstein's theory of general relativity, the best theoretical physics we have implies a beginning as well. And then there are other astronomical observations, the fact that we don't have a huge disparity in the age range of galaxies, and there's a number of other evidences. But the redshift, the cosmic background radiation, the implications of general relativity, and the second law of thermodynamics would be four big solid reasons to believe that universe had a beginning. And then another proof that's been offered, based on special relativity, the Borde Guth Vilenkin Theorem.

Frank:
Let's talk about next week because we're about out of time now.

Steve:
Okay. Good.

Frank:
And then we're going to talk about fine-tuning and we're going to talk about the evidence that we find in life. It's always great to have Stephen C. Meyer on the program. Steve, thanks for being on the show.

Steve:
Hey, thank you. Bottom line, no reason for kids to be losing their faith over science.

Frank:
That's right. Absolutely. Alright, that Stephen Meyer ladies and gentlemen. Great being with you today. Don't forget about J. Warner Wallace's course on Cold Case Christianity. You can still sign up. Go to CrossExamined.org and you'll see it there. Also, look for the online course in the curriculum coming down the road for virtually every single age group. Go to

CrossExamined.org, click on online courses, and you will see it there. God bless. See you next week.