Who is Agent X?

Where did God come from?
Proving that it is more rational to think God exists, without using the Bible

This paper is now available in a much fuller form in a book. You can order it at Amazon.com. http://www.amazon.com/Who-Agent-Proving-Science-Rational/dp/1448626196

Abstract: *This paper attempts to show that it has always been an accepted scientific and philosophical fact that "Only things that have begun to exist needs a first cause and anything that existed forever needs no cause." It then goes on to show that the Universe began to exist and thus needs a cause. It shows that not accepting the need for a cause is illogical, unscientific and actually requires a certain amount of blind faith. Once it has established the need for a first cause, it then goes on to show how that the first cause cannot be a non-mechanistic agent. The further necessary characteristics of the first cause can be derived from the causation of the universe. The reader may find the conclusion interesting.*
And finally it concludes by answering the age old question: "Where did God come from?"

Quick note: Please make sure you read ALL the objections at the end. This paper has been reviewed by numerous atheists who have given me lots of objections. I have responded to all of these objections at the end.
The book "Who is Agent X" has a fuller objections index and is available from www.NoBlindFaith.com.

Introduction
I'd like to present a rational and logical case for how I came to my conclusions about the first cause of the universe. I don't want anyone to feel that I am forcing my views on them, but having said that I do want to emphasize that what I am going to present is not an opinion or a belief. I wish to present a rational and logical argument. Now, naturally I could be wrong. I don't think I am, but I could be. (Of course, if you disagree with me then you think I'm wrong and you think you are right about that. So it's OK to think you are right and others are wrong). However, given all that, if you remember your Freshman Logic 101 courses from college, you will remember that there are only 2 ways to refute an argument.
You have to either

a. show the facts are wrong or incomplete or
b. show that the logic is wrong.

There is no other way to refute an argument. So if you think I am wrong, that's how you will need to refute me. Note too that if both the facts and the logic are correct then it becomes irrelevant as to the motivations of the presenter of the argument. It matters not why I believe what I believe, but only if my argument is sound. As I said, however please do not feel that I am forcing my views on you at anytime. I like to consider myself a rational person, and this is the logic behind my views.

Also do remember: **Do not let the consequences of your logic force you to reject that logic.**
Far too often I've run into people who reject reasoning, not because the reasoning is faulty but because they don't want the consequences to be true. We see this everyday, a man rejects that he has cancer, because of what that will mean about death. A battered wife rejects that her husband is dangerous because of what that means about her marriage and herself. A mother rejects that her son is a criminal because of what that implies about her family and herself. An alcoholic or gambling addict rejects that they are addicts because it implies weakness in themselves. Yet in reality the best way to deal with the issue is to face the facts and try to deal with the truth. So in the same way, don't let the consequences of the logic I am about to present you force you to reject it. See if the logic is sound, then deal with the consequences independently. In other words, I'm asking that you think rationally and not emotionally.

Abandoning "God"
As we begin, I'd like to abandon the word "God" for most of this discussion with regard to a first cause. Instead I'd like to focus on what I'll call Agent X. Agent X is the first cause. We will postulate that God is separate from Agent X at first. The reason I do this is because if I talk about a God, I presume the Christian viewpoint. If I talk about a mindless chance first cause I presume the atheistic viewpoint. By using "Agent X" I'm saying it will define itself by its characteristics.

Let us examine the need for an Agent X and the characteristics of Agent X. To do so we will first start with a review of past views of the Universe and God.

50 years ago Atheists and many scientists said:

1. Everything, which has a beginning, has a cause, and anything that existed forever needs no cause.

2. The Universe had no beginning and existed forever.
3. Therefore the universe needs no cause (no Agent X).

But at the same time 50 years ago Theists and some scientists said:

1. Everything that has a beginning has a cause, and anything that existed forever needs no cause. (Same as what the Atheists and most scientists said).
2. God had no beginning and existed forever.
3. Therefore God needs no cause (no Agent X).

This resulted in everyone being at a standstill. Because the Christians would ask: where did the Universe come from and the Atheists would say "It's always been there, it doesn't need to come from anywhere." And then they'd ask: "Where did God come from and the Theists would say "He's always been there, he doesn't need to come from anywhere."

But do note that one thing BOTH atheists and theists agreed on was:

Everything, which has a beginning, has a cause, and anything that existed forever needs no cause.

Remember too that in those days, the atheists who were scientists were repulsed by the thought that Christians proposed that the universe had not existed forever. If the reader is an atheist, may I ask that decide if they agree with the atheists like Bertrand Russell and numerous other scientists including Fred Hoyle that **had** the Universe existed forever, it would have needed no cause.

Recently we realized the Universe did have a beginning.

Some years ago Hubble (the man, not the telescope) realized that some stars were redder than they should have been. As scientists studied this phenomenon more, they realized that these stars were redder than they were supposed to be because the stars were traveling at incredible speeds away from us. This is what is called the Doppler Shift. A simple example of the Doppler Shift is the sound a car makes as it passes us when we are standing by the side of a freeway. The sound of the car is higher as the car approaches us and lowers as it passes us. That's because though the sound is always the same, the speed of the car adds to the frequency of the sound and makes it higher as it is coming towards us. Each subsequent wave hits us closer together. After the car starts going away from us the frequency of the sound we hear is lowered and the sound sounds lower.

This is what is happening to the stars. Red is a lower frequency of light. So as the stars rapidly move away from us, their lights that they shine back at us looks redder/lower in frequency that they really are. We then turn and look in other directions around us and we see the same thing. Now if on the other hands we see a star that is bluer than is should be, we'd better get out of the way fast… (I'm just kidding, it'd probably miss us by a few million light years).

First conclusion: the Universe is expanding.

This causes some real problems.

First, if the universe is expanding, that means that it is expanding from something smaller. That means at some point it was very small and didn't exist. Therefore, that means that it can't be infinitely old. Because if the Universe is expanding and is infinitely old, it would have long since expanded and all we'd see is white or gray light out there? I know you'd think we'd see nothingness out there because they'd be infinitely far away from us. But after an infinite time period it seems that all that light would eventually reach the earth and all we'd see is a gray light all around, but nothing would be close to us, nothing. But, because we can see that the Universe is still expanding, we can work backwards and roughly calculate the point at which it started expanding.

Stephen Hawking and most of the scientists today calculated that the universe, light, matter and everything suddenly came into being with a Big Bang about 13.5 Billion years ago[1]. This was the point at which matter and **time** started to exist.

This is an important statement. 13.5 Billion[2] years ago, there was no

[1] The Big Bang marks the instant at which the universe began, when space and time came into existence and all the matter in the cosmos started to expand. Amazingly, theorists have deduced the history of the universe dating back to just 10^{-43} second (10 million trillion trillion trillionths of a second) after the Big Bang.

[2] Some folks have asked if the 13.5B timeframe means that the Bible is incorrect when it discusses a 6 day creation cycle. While there is insufficient space to discuss this here, suffice it to say that first of all we must take into account that at the point of the singularity time was not linear. We all know that time slows down near a black hole or any immense gravitational field so it is not rational to think that time was constant right after the Big Bang. Secondly there are numerous valid interpretations of Genesis 1 and the word Yom that allow for a longer creation time (see Hugh Ross, A Matter of Days: Resolving a Creation Controversy, NavPress 2004 and Rodney Whitefield "Reading Genesis One" www.answersincreation.org. And finally many times we interpret the Bible incorrectly based on our pre conceived notions that aren't biblical – for instance following Plato's lead the Catholic Church interpreted the Bible to indicate that

Time. There was no Space. There was just a Singularity.

The state of the universe just before the Big Bang is called the Singularity[3]. For more info:
http://www.pbs.org/wnet/hawking/universes/html/bang.html

A singularity is a point in space-time at which gravitational forces cause matter to have infinite density and infinitesimal volume, and cause space and time to become infinitely distorted. Prior to the singularity Time and Space and dimensions did not exist. This is the beginning of all known and measurable things.

Then the Big Bang happens. And the Big Bang caused a lot of problems. The first problem is that that means the universe had a beginning[4]. Remember: everything that has a beginning needs a cause.

The Main problem.
Remember what the scientists said: If something always existed, it needed no beginning. Well the Universe didn't exist forever, so in this case it **does** need a beginning.

Interestingly most atheistic scientists recognized this and for the first few decades, the folks who proposed and presented papers on the Big Bang Theory were mocked, drummed out of universities and refused grants and were not allowed to publish their papers in peer review journals (this was not very scientific or rational of my scientific community, I'm embarrassed to say). In fact, the very name "Big Bang" was a derisive name given to it by a scientist name Fred Hoyle who was mocking the theory.

Numerous atheistic scientists have said versions of the following:

> *"Philosophically, the notion of a beginning of the present order of Nature is repugnant to me … I should like to find a genuine loophole."*
> **Arthur Eddington,** "The End of the World: From the Standpoint of Mathematical Physics" Nature, vol. 127 (1931) p. 450

So today science still tells us that:

1. Everything, which has a beginning, has a cause; anything that existed forever needs no cause.
2. The universe **HAS** a beginning and hasn't existed forever.
3. Therefore the universe **NEEDS** a cause.

Since we don't know the cause, and we don't want to jump to the "God" conclusion, we will call the cause Agent X. Thus the universe needs an Agent X.

Atheists will say: No problem Agent X is just hyperspace
Now atheists will say: OK that's fine. But this Agent X is just a small area of hyperspace that gave rise to the singularity.
Or they will say "We can use the wave theory to prove that agent X is just an object, not in time and space, that existed for ever and the universe has a 98% probability of arising."

In other words, they are saying OK well we grant you that the universe had a beginning, but what gave **rise** to the universe had no beginning.

The need for a non-mechanistic agent
But that doesn't logically work. You see

1. We know that the universe has a beginning and a cause.

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the earth was flat. Yet once Copernicus used science to prove it wasn't, we realized that there in actually no requirement for the world to be flat in the Bible. But in the end, the speed of time varies depending on the relationship between the time measurer and the event they are watching.

[3] The singularity is the point when a black hole collapses into itself and nothing can escape it once inside the event horizon because its gravity is infinitely strong. It is a point where all matter is crushed into infinite density and space and time cease to exist, as we know it.

"We showed that if general relativity is correct, any reasonable model of the universe must start with a singularity...."

Stephan Hawking, Black Holes and Baby Universes.

The event horizon is the gravity field of a black hole where the space-time is so bent that light cannot escape it. The event horizon creates a region in space where nothing can escape, since nothing can go beyond the speed of light. Thus when something enters the event horizon, it will vanish without a trace. Should the object be emitting something, after it is enveloped by the event horizon, not even the emissions that traced its existence will escape the black hole. Time is assumed to stand still at the horizon. Does it reverse inside the black hole? This and many other questions may never be answered.

[4] Note that they've tried to come up with a cyclical model but it doesn't work. They are claiming that the universe collapses and then expands and then collapses and so on. But so far there is little to no proof of that. One could however accept the cyclical model on "faith." We talk about this later as well.

2. We also know that this cause (Agent X) cannot be mechanistic (i.e. it cannot be automatic – I'll explain more about this as we go along).
3. Thus the cause must be a being that can decide to do something different volitionally.

Mechanistic Agent?
Thus and this is very important: the first cause needs to be caused by a **non-**mechanistic agent[5]. What is a ***mechanistic*** agent? I'm glad you asked. A mechanistic agent is something that does the same thing over and over again and cannot change its mind or decide to do something different for no apparent reason.

A **non-**mechanistic agent on the other hand is an agent that **can** change its mind and can decide to do something different.

This is slightly confusing so let me explain it again. Imagine if you had a top that was spinning.
Does the top have a free will? No, it is mechanistic. In other words it can't suddenly decide to start or stop spinning on its own free will.

There are two options here.
a. One option is that every time the top makes a complete revolution a universe is spawned or
b. Whenever the top **stops** spinning, a Universe is spawned

Let's take option **1: Every time the top make a complete revolution a Universe is spawned.**
After infinite number of years, how many universes would there be?
Infinite.
What about if the top spun around very slowly? Well even if it take a very very long time to spin, after infinite years how many universes would there be? Infinite! Why? Because as slow as the top spins, infinity is always longer. But you ask, what if the top takes infinitely long to make one spin? Well then, the universe would never have been spawned.

Ok **Option 2. The other option is that whenever the top stops spinning, a Universe is spawned.**
Well in this case, if the top was going to stop spinning and we looked back in infinity, how long ago would the top have stopped spinning?
Well an eternity ago (i.e. the Universe would be eternally old). Why? Because however long it took for the top to spin down, Infinity would be much greater and would have passed after the top had stopped spinning.

Why is this so important? Let me explain, you see if the first cause is caused by a mechanistic agent like hyperspace or a lepton or some sort of extra-dimensional particle, then the logical conclusion is that it would have been caused in infinity past, because the mechanistic agent can only do something once or do the same thing over and over again. Remember it cannot think, it has no freewill it has not mind to make a decision.

So to summarize: If a mechanistic agent had created the universe, we have two options:
1. It would have created the Universe in the infinite past. This means the Universe would be either infinitely old and or[6]
2. There would be an infinite number of them.
But since the Universe is not infinitely old, it was not caused in infinity past. So something must have changed for it to occur. That change can only be a non-mechanistic agent that has volition or freewill (i.e. can decide to do something different than it has been doing).

However if the top had a freewill and a mind and could one day say: I will do something different now[7] than I have ever done before, then the top could stop spinning. In the same way: If the Universe has not always existed, it would take a non-

[5] William Lane Craig says: "In fact, I think that it can be plausibly argued that the cause of the universe must be a personal Creator. For how else could a temporal effect arise from an eternal cause? If the cause were simply a mechanically operating set of necessary and sufficient conditions existing from eternity, then why would not the effect also exist from eternity? For example, if the cause of water's being frozen is the temperature's being below zero degrees, then if the temperature were below zero degrees from eternity, then any water present would be frozen from eternity. The only way to have an eternal cause but a temporal effect would seem to be if the cause is a personal agent who freely chooses to create an effect in time. For example, a man sitting from eternity may will to stand up; hence, a temporal effect may arise from an eternally existing agent. Indeed, the agent may will from eternity to create a temporal effect, so that no change in the agent need be conceived. Thus, we are brought not merely to the first cause of the universe, but to its personal Creator".
http://www.leaderu.com/truth/3truth11.html

[6] Note even if it was going to create more than one, or any finite number of universes, all these universes would have been created in the infinite causal past.

[7] Of course we are limited by language here because the freewill agent looks like it knows the concept of time before time existed. Note here I speak of before in causal (that's cause-al not cas-ual) relationship not temporal relationship. In reality the word NOW has no meaning at the singularity. But a freewill agent who is not constrained by time or space would be able to do "something".

mechanistic being i.e. a "Free Agent" with a will to say: Today/Now/at this point[8] I will create a Universe where and when there wasn't one before and it won't be infinitely ago.

So to answer the initial objections:
Objection 1: Hyperspace created the singularity- But Hyperspace is a mechanistic agent and has no freewill so we know this cannot be the solution.
Objection 2: The singularity had a 98% chance of coming about spontaneously- In that case it would have occurred infinitely ago OR infinite times. Because if something has a 98% chance of occurring, it will occur over and over again in infinity. Or it would have happened once infinity ago. But as we can see the universe is not infinitely old nor is there proof of infinite universes.
Objection 3: OK well, we grant you that the universe had a beginning, but what gave RISE to the universe had NO beginning – But that simply pushes the problem back and doesn't solve it. At some point in time, you are stuck with the need for a non-mechanistic freewill agent.

In case at this point you are thinking that I've missed the fact that the universe could have been created by a mechanistic agent that is constantly creating new universes[9] (otherwise known as a multi-verse or quantum universes), the problem is that there is NO current evidence for infinite universes. Paul Davies also tried to postulate that the first universe created a bud universe that breaks off from its parent universe and that bud universe expanded and created another bud universe and so on and so forth. However, there is no evidence of this whatsoever and one would have to take it on blind faith. I always ask my atheistic friends if they really want to base their entire belief system on blind faith? In which case I'd bet my rational faith against their blind faith any day. I then ask, what is the difference between that theory of a multi-verse and a myth of say the Great Serpent Spirit? Neither can be proven.

Paul Davis now agrees that it's most likely that a God exists.

But here is what is worse for this theory: My Atheist friends are always telling me that if we can't measure, see, touch, taste, smell, hear, interact or verify that something exists then you are being a superstitious freak to believe in it. So let me ask you this? You are postulating that there are infinite other universes out there, none of which I can measure, see, touch, taste, smell, hear, interact or verify? Aren't you being a superstitious freak to believe that? And you want me to believe it too (some sort of evangelization to your superstitious blind faith)? I don't think I have that much blind faith. Especially when the other alternative seams to actually have certain claims of evidences in addition to this. What I mean by that is that when I start adding other proofs to this like the Moral Argument, the Resurrection of Jesus, the accuracy of the New Testament, and so on, we see that the weight of the evidence really lies on the Theist's view and one has to force oneself to believe in Atheism and multiple universes. I'll expand on this in the responses to Objections below.

Note also that this explains why the singularity itself could **not** be Agent X. Because the singularity is itself a mechanistic process, any singularity that gives rise to a big bang will have done it in infinity past; any singularity that did not give rise to a big bang in infinity past will never do it in the future either. Thus to imagine that the singularity is a non-mechanistic agent would require us to imagine that the singularity has a volition and free will. In which case the singularity is much more than a singularity isn't it? It's a Being with a mind.

I should forewarn you however that many people *still* continue to try to postulate mechanistic solutions to this. For instance see Quentin Smith's attempted rebuttal at the end of this paper. Smith merely proposes another mechanistic agent as a cause of the first cause. That doesn't solve the problem. So watch out for these. They just push the problem back further. In short, you cannot eliminate the need for a non-mechanistic agent by postulating an earlier mechanistic agent.

Please note that as we go through this, I'm not saying the first cause was CAUSED. It is the caus**er**. It's the uncaused causer. Some people use the words the uncaused cause. But what they really mean is the uncaused caus**er**. This causer had no CAUSE of its own since this matches up with the premise give at the beginning. I.e. Everything, which has a beginning, has a cause; anything that existed forever needs no cause.

What if nothing created the universe?
Well if nothing created the universe you still have a problem? Why? Because "nothing" has no mind and is mechanistic. And if "nothing" was going to create a universe it would have either created it infinitely ago, or it would have created infinite universes.

<u>Further Problems with the Big Bang</u>

[8] Whatever that means in a timeless eternity.

[9] And this is what we'd expect to see if the "98% probable wave theory" was the cause.

The second problem is that we noticed that the Big Bang had to be so finely tuned or it would have been a big flop. Here's a list of 4 of the about 37 known variables (some scientists claim there are over 200) and if they had deviated by as little as shown in the table we'd not get a universe or we'd get a universe that has no heavy metals or has no mass or expands too rapidly or never expands and stays in a plasma form and so on.

Here are 4 of the 37 parameters that we know of so far and the max deviation allowed before things fall apart.:

Ratio of Electrons to Protons	$1:10^{37}$	*if larger or smaller*: chemical bonding would be insufficient for life chemistry
Ratio of Electromagnetic Force to Gravity	$1:10^{40}$	*if larger*: all stars would be at least 40% more massive than the sun; hence, stellar burning would be too brief and too uneven for life support *if smaller*: all stars would be at least 20% less massive than the sun, thus incapable of producing heavy elements
Expansion Rate of Universe	$1:10^{55}$	if larger, no galaxy formation; if smaller, universe would have collapsed prior to star formation.
Mass of Universe	$1:10^{59}$	*if larger*: overabundance of deuterium from big bang would cause stars to burn rapidly, too rapidly for life to form *if smaller*: insufficient helium from big bang would result in a shortage of heavy elements

See the appendix at the end of this paper for the remaining 33.

Stephen Hawking[10] (1942 -)
"The initial state of the universe must have been very carefully chosen indeed. It would be very difficult to explain why the universe should have begun in just this way, except as the act of a God who intended to create beings like us."

Paul Davies (1946 -)
"It seems as though somebody has fine-tuned nature's numbers to make the universe … the impression of design is overwhelming."

By the way while it's only a 50/50 chance, it's relevant to note that science got it wrong, while the Bible had it right over 4000 years ago.

Multidimensionality
We can go a step further. 10^{-23} seconds after the Big Bang started, we can calculate that there used to be at least 10 dimensions. Now we know what 4 of the dimensions are. They are time and space (time, height, length and width). But at the point of the $t_{singularity}$, science can show the existence of up to 10 dimensions if not 26 (postulated by the latest in String Theory or M Theory). Now within a short time after the big bang i.e. $t_{singularity} + 10^{-23}$ seconds, all but 4 of those dimensions disappeared to our senses. Note that the 26 dimensions do NOT exist within the singularity. They only appear AFTER the Big Bang for those 10^{-23} seconds.

This means that:

a. The concept of multi-dimensionality is not unscientific. I.e. many things *must* exist in 5 dimensions or more.

b. Beings like us humans, could exist in 5 dimensions and if the beings had sensors and processors, they may only have these sensors in 4 of those dimensions and thus be unable to sense the 5th dimension. Imagine a still image camera on a tripod. *It* exists in time and 3D space, but it can only take 2D pictures and is limited in the "time" direction. The camera doesn't "realize" 3D exists.

   Note that a movie camera could take 2D + quantized[11] Time pictures. In addition, if you move the camera in the 3rd dimension and stitched those pictures together, you'd get quantized 3D (but the 2D camera would never be able to "comprehend" them because it could only register 2D pictures). Thus, while not provable, is certainly within the realm of scientific possibility that human beings could be multidimensional, but not be able to sense all the dimensions that they exist in. Yes, exactly, just like a *soul*. In that case asking why you can't measure or weigh or see the soul in 4D is like a 2D creature asking why they can't measure "up" in the x-axis or a still camera asking why it can't see time or measure it with a ruler.

[10] Note that while I appeal to astrophysicists to provide facts about the singularity and the beginning of the universe, it would be an "appeal to authority" fallacy to try to use an astrophysicist's opinions about God to try and prove that God exists. Just because someone like Einstein was a deist only reflects his opinion, it is not a logical or scientific proof. In this paper I wish to deal with proofs and opinions with regards to each authority's expertise.
[11] Quantized means cut up. I.e. slices of time since the video camera only takes 30 frames per second (OK OK 29.97 fps to be exact. Having designed some of the first MPEG Video systems deployed back in 1992, you'd think I'd be precise).

c. Multi-dimensionality could allow the existence of life forms in these other dimensions. Life forms that may or may not intersect our dimensions[12]. When these beings did intersect our dimension we would see them slowly or quickly appear, when they leave our dimension they will shrink and disappear. This is similar to a 3D sphere intersecting a 2D paper. It will start as a point, grow to a circle, and then shrink back into a point. Similarly if you took a cube and passed it or rotated it through a plane, we'd see some very interesting shapes as the cube intersected the plane (unless you did it on one of the square ends, then you'd just see a square suddenly appear and then later suddenly disappear). Imagine now a 4D sphere intersecting a 3D space. We'd first see a dot, then we'd see a small sphere floating in mid air, it would grow larger and larger until it reached the size of its 3D "diameter" then it would start to shrink down again and then disappear. A 5D creature could "fly" in this way, as they'd look like they were floating in thin air.

d. Notice that if a spatially 2D being which existed on a piece of paper were to try and hide behind a 2D object like a square, it would not stop you, a spatially 3D being, from seeing not only "behind" the square, but you would see *inside* the square at all times. In fact, you could see inside the 2D being as well. Your presence in a sense would be everywhere the 2D creature could go. Thus, it follows that a being that had 4 dimensional senses would be able to see "over" anything that a 3D being would be able to hide behind. In other words, an n dimensional being can't hide from a (n+1) dimensional being.[13]

e. Interestingly enough, you could take a 3D basketball, and turn it inside out in 4D space without breaking it.

f. You, as a 3D creature could also be just as close as or closer to any 2D creature than any 2D creature could be to *another* 2D creature. How? Just by placing your hand on top of the 2D creatures. They would not sense it, see it, know about it and yet you'd be far closer to both of them in more places than they are to each other. In the same way, you could even be inside a 2D creature and influence it, as long as you were able to achieve that without destroying the 2D creature. Perhaps that is what is meant by being possessed.

g. All the dimensions that came into being are "inside" the Universe. I.e. they are part of the Universe. They did not exist before the universe.

h. Thus, whatever caused or created the Universe and its multidimensional space is not within that space or time, nor is it constrained by it. In other words, Agent X, the cause of the universe is *not* part of the universe. It is not multidimensional but *extra*-dimensional. This by the way immediately eliminates any sort of pantheistic concept. In other words, science disproves pantheism, which claims that Agent X *is* the universe.

i. Whatever created time (i.e. Agent X) is similarly 'outside' of time. Therefore, Agent X is not constrained by time unless it wants to be[14].

j. Hell and Heaven are not unscientific irrational concepts. Science has an easy way to explain how they could exist. They could be in other dimensions.[15] If there are up to 26 dimensions then asking where Hell and Heaven are in 3D space only shows one's ignorance. Heaven is only "up" in as much as the 4th spatial dimension is "up" for us. It's more accurate to say it's orthogonal. Similarly, Hell is only down in the same way. Can I prove this? Not at all, but we can show that it's not unreasonable and fits the evidence we have of it. Should you use this as the only point to believe what the Bible says? Again, not at all. However, it does seem to indicate that this ancient text was cognizant of alternate dimensions before modern science came around to the concept. Not to beat this point into the ground, but a being limited to sensory perception in 3D space would invariable describe something in another dimension as "up" or "out" there; just as a 2D being may be tempted to use the word "left" or "forward."

k. If we are transformed into multidimensional beings or have our senses enabled in multidimensional space then imaging how many more colors we'd see, how many more tastes, senses, smells, sounds, and a myriad of other experiences we'd have. The richness of that can hardly be imagined, it's like a blind person suddenly seeing color or a 2D creature suddenly seeing a plane of color.

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[12] Multidimensionality could easily explain how Jesus could show up in a room with locked doors. He merely hops into a 5th dimension and back into ours. Just like a 3D creature would hop up into the 3rd dimension to move past a 2D prison (a square drawn on the paper). This could also explain the "Spirit World" and indicate where Heaven is. It's not up, but orthogonal in a multidimensional space. The concept is fully rational. So where is hell? Perhaps in another blend of dimensions that don't intersect ours. Can multidimensional beings intersect our space like angels and demons? Sure, it's scientifically explainable though currently not provable.

[13] This could also explain how "Every eye would see" when Christ returns. If His return is in 4D space and all our 4D senses are suddenly enabled, we could all see him, even if we are on opposite sides of the universe. Just like if a 2D creature was able to see in 3D, nothing else in the 2D creature's world could block its view of the 3D event because we'd be "above" the 2D creature.

[14] It's important to note that William Lane Craig postulates that once God/Agent X created time he put himself into time and constrained himself by it, though being infinite and of infinite patience and of infinite knowledge it would not have any of the problems we might think it would have. Hugh Ross postulates the existence perhaps of an alternate time axis. I actually have not yet taken any particular position on this issue. I just need a bit more *time* to think about it. Sorry, sorry that was too tempting.

[15] Or in other universes if they exist as there after this particular Universe is destroyed and a new one made from it, Heaven and Hell will still exist. This is why I say that there is good reason to think perhaps at least 2 other Universes exist.

For more information on multidimensional space and some great video clips go to:
***www.NoBlindFaith.com/AgentX/Dimensions.htm*.**

Here's what is also very critical. It's important that you realize that Agent X is NOT natural. Why? Because Agent X has to exist before time and space existed. That is, the first cause is not constrained by the 4 dimensions (what we call the natural) *or* the possible 26 dimensions (what we'd call supernatural). We can't technically say that Agent X is super-natural, because that would imply that it is a superset of the natural, i.e. constrained by the 26 dimension. However, the first cause, Agent X existed before any of the 26 possible dimensions.

So what we have to say is that Agent X is "**extra**-natural" or just **not natural** and that it is not constrained by **any** of the dimensions in **anyway**.

Thus the concept of extra-natural and extra-dimensional is not only scientific but it is a necessary characteristic of the first cause of the universe.

Note that Atheists can now **not** say that the supernatural or the extra-natural is impossible because science has just shown us that it is necessary[16]. This is unnatural, call it whatever you wish to call it, but it's not a normal event and thus the atheist has to admit that even they have to plead to the existence of extra-natural, supernatural or unnatural events. So my question is if one extra-natural event took place, in an infinity prior to the universe, why not billions of extra-natural events? If you are going to abandon your principles for one event, why do you get to hold on to them for infinite events prior to that? And as we see they do just that when they argue for multiple universes, and they have to have blind faith to do so.

Time and Space
Next, we must realize that since the first cause is outside of the Universe, this first cause must also be outside of the constraints of time and space and outside of the Universe. Why do we say this? Because the first cause existed before space and time existed. Prior to the singularity, there was no time or space. The first cause existed even before the singularity, since it gave rise to the singularity. Therefore, the first cause is not only outside of time and space, but it is unconstrained by time and space.

Please note the obvious: Agent X exists outside of all dimensions since it existed before dimensions came to exist. In other words it's is not bound by the multi dimensions of time space and any of the other dimensions that physicists postulate. This means that it can easily move in and out of these dimensions at will[17].

The next issue: Earth seems to be in a very special location that seems to allow "Scientific Discovery"
Let's look at some of these:

a. Transparent Atmosphere
Many planets either have NO atmosphere or have an opaque atmosphere.
There's no requirement for life to HAVE a transparent Atmosphere.
But there IS a requirement for life to have a radiation protective atmosphere.
This allows us to actually see way out there and study cosmology.

b. Our location in the spiral arm of the Milky Way Galaxy.
Too low, too deep or too close to the interior arms.
And we'd never be able to see past our own galaxy to discover the Big Bang.

c. Satellite Moon is the right size and right distance
The moon is 400 times smaller than the sun and 400 times closer than the sun. This means we get a perfect eclipse of the sun. This allows the verification of various key experiments like the gravitational effect on light, the composition of the sun, which allowed us to figure out the color and thus the red-shift of the stars etc. It also allowed the world to realize that the strange ideas that a obscure patent clerk in Austria had were confirmable.

If the moon was too big and we see only black, if it was too small and it's too bright to see anything else. We have not yet found any other planet with the same relationship to the sun. Some people have argued that we could still have done this discovery with a larger or a smaller moon. But as soon as you try this experiment out yourself you will see it isn't possible.

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[16] By the way, one other reason why Atheists cannot say the supernatural is impossible is abiogenisis. That is life from non-life. The atheist has to admit that at some point in our history life came from non-life.
[17] This is important because it explains how there can be a "spiritual" dimension. This would a dimension that is outside of our 4D space. This other dimension is a valid and logical physics concept. Whether it is populated by spirits or Pink Elephants is pure conjecture at this point, but we aren't trying to prove that are we?

d. The equations that define the universe reduce to simple humanly comprehendible equations. There is no natural "requirement" for this to be so.
e.g. $e= mc^2$
In addition, it allows us to know that we are getting closer to the "right answer".

e. Sufficient planets in Solar System to allow us to track, measure and calculate planetary mechanics as well as gravitational relationships.
Some solar systems only have 1 or 2 planets. We have enough to be able to figure out the cosmological relationships locally and then apply them universally.

There are many other facts like this that lead us to think our world was designed for discovery.

So what does that tell us about Agent X?
Agent X wants us to discover Him using Science- It wants us to develop science.

Conclusion
We shall call (and have been calling) this first cause "Agent X." Note that we are free to call it anything we wish as long as we establish that it is a free will agent, which is capable of creating a Universe (including Time). In addition, we must conclude that this free agent is outside the Universe and has dominion over Universe.[18]

This thus implies that Agent X has the following characteristics that we have derived:
1. It exists without cause
2. It is a freewill non-mechanistic agent
3. It is not constrained by time or space (that is, it is Omnipresent in time and space and all dimensions, Omniscient *in* the Universe).
4. It is powerful enough to create a universe (that is, it is Omnipotent *for* the Universe)
5. It is knowledgeable to create a finely tuned universe where even minute changes in values of things like the gravitational field would result in an unlivable or no universe (that is, it is Omniscient *about* the universe).
6. It wants us to discover it: It is personal.

Now I don't know about you, but this is what I define as God. Call it what you may, but he/she/it has those characteristics by derivation.

Thus, we should not see this as a statement of faith, but just one of derivation. It's a logical derivation of the necessary characteristics of the first cause.

It is just as valid and in fact what I'd consider a more rational a derivation than the derivation that the Universe is rebounding cyclically or is formed by buds or that there are infinite universes. Neither can be proven at this time (actually the cyclical rebounding universe is at a disadvantage because the current evidence indicates that it **cannot** happen).

It is interesting to note that the statement that "There is "no" freewill non-mechanistic extra-dimensional Agent" (the Atheistic view) is a statement of **faith.**
Why?
Because it assumes without scientific evidence that the Universe is a result of infinite previous collapsing and rebounding Universes or that the universe has no cause when we know that it requires a cause. We can only calculate one universe and can only prove one universe scientifically. In other words, you have to have faith to believe contrary to the current evidence we have, because there is no evidence that there is no first cause and all the evidence is against it.

Or you would need to have faith that future evidence will come to light that disputes the current thinking.

Please note that at no time have we made a valid case for the God of the ***Bible,*** nor have I provided any arguments that prove that Jesus is God. We have only made a case for a supreme free will non-mechanistic agent that is not constrained by time or space, which can create a universe called Agent X. The case for the God of the Bible and for Jesus is saved for another day.

[18] On a side note, it is hard to believe that this free agent created the Universe by accident and has no control over it - but I guess that is an option - just not one that I have spent much time on.

But where did Agent X come from?[19]
Now the big question that everyone asks is: But where did God COME from? Kids ask that, atheists ask that. We ask that.

The short answer for this is: That's a stupid question.

OK OK we really do need to answer it. Well the answer is that Agent X did not come from anywhere because it did not **need** to come from anywhere. Remember one of the derivations for Agent X is that it is not constrained by time or space.

Here is the full explanation.
Agent X is the cause of the Universe
The universe consists of both time and space.
So Agent X is the cause of time.

OK back to the singularity? 13.5 Billion years ago. Before the Singularity there was no time. This is a scientific theory that most atheists must accept if they give any heed to science. (If they don't, then we are back to faith – aren't we?)

So let's think this through: Agent X is the cause of everything. And Time is something that Agent X caused. As we just showed, science shows us that when the universe did not exist, time did not exist. So if Agent X caused Time (and space and the Big Bang), Agent X is not bound by time and existed before time. And similarly Agent X is also not bound by Space and existed without space.

So the question was asked: Where did Agent X come from? Why does Agent X not need a beginning? And the answer is:
There was no before before Agent X caused time, so the question has no meaning[20].

Let me say that again because I've had people say: Huh?
There was no "before" before Agent X caused time, so the question has no meaning.
There was **also** no "from" before Agent X caused space so the question has even less meaning.
You see you need "time" to have a "before" and you need "space" to have a "from."

But you see the instant "before"[21] Agent X caused Time and space, the instant "before" the singularity or even IN the singularity, the words "before" and "from" had no meaning. In fact the word "instant" had no meaning because there was no time. In fact the word "in" had no meaning either for that matter because there was no space either. …….Whoops the word "had" had no meaning either.

However you look at it, before Agent X caused Time, the words before and from had no meaning.

You see, we can't even describe it or explain it because we lack the ability to imagine it, and we lack the words to describe it, so forget about understanding it fully. However, you can see why I think this is a rational answer to the question. Don't feel like you have to accept it. However, it **is** quite scientific.

Scientifically we would say: Before the Singularity, the word "before" had no meaning. Therefore it is meaningless to ask what was before the singularity, just as it is meaningless to ask where the first cause of the singularity came from. But note that it is NOT meaningless to ask what "caused" the singularity. Because we know the singularity as a mechanistic agent could not have existed in timeless eternity and then suddenly caused the big bang (see all our reasons about why non-mechanistic agents can't explain the cause). So while Agent X is causally prior to the singularity, it is NOT temporally prior to the singularity. Yes it boggles the mind doesn't it?

In addition when people ask: Where did Agent X come from? The answer could also include this statement: Before Agent X created Space, the words where and from had no meaning, so what is your question exactly?

So let's go back to what Atheists used to say:
Anything that began to exist needs a Cause. Anything that existed for ever needs no cause.

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[19] In other words where the God come from and who made God?

[20] William Lane Craig says: Notice that I am not saying that this Being existed before the Big Bang temporally. He is *causally* prior to the Big Bang, but not *temporally* prior to the Big Bang. http://www.leaderu.com/offices/billcraig/docs/jesseph-craig2.html

[21] Again we are stuck with having to use words that are really meaningless in a timeless dimensionless singularity.

Well God did not begin to exist as he has always existed. Thus God needs no Cause and God was not made by anything. It fits their own theory.

But you say:
We don't know if an alternate theory will arise that will be provable that shows that the Universe is infinitely old, or that there are infinite numbers of them. Science continues to evolve. Remember we used to think the world was flat.

Well as an atheist you have to go according to the current state of science so until that theory is proven, if you are depending on it, you are depending on blind faith. I personally don't like any sort of blind faith. I'd like to go with the more rational and logical explanation. And to tell the truth, two can play that, game. If you want to wait till science disproves itself, why can't we wait a bit longer till science disproves itself AGAIN? How long do we wait and how long do you blindly believe what is unscientific hoping to be bailed out from the God concept. I call this the "Science of the Gaps" theory. I.e. I don't know or don't like the current answer so I'll just say that we'll find the answer I like later and ignore the current rational conclusions. Did we ignore the provability of various biological processes in light of "waiting for a better theory"? Where will you draw your line on rejecting science?

Frankly, people who have blind faith in things that are unscientific, scare me (OK I just had to say that – but it is true).

Summary
In conclusion, we started with "Who is Agent X", and asked what the Characteristics of X were.

I postulated that Agent X was separate from God to begin with, but at the end of this we conclude that Agent X **is** God since the evidence and logic rationally point to that conclusion.

Given this, it seems that is also takes faith to be an atheist and in light of the other proofs about Christianity (shown elsewhere on www.NoBlindFaith.com), it would seem that the atheist may also have the deck stacked against him.

Please read these Objections as it may well address one of your question. *I've had the opportunity to have many atheists friends and not so friendly ones review this paper and try to attack its premises. This Q&A hopefully covers most of what people ask. If I've missed your objection here, please feel free to email it to me at neil@NoBlindFaith.com and I will do my best to address it genuinely. Remember if you can prove to me that I am wrong, I do not wish to hang on to a myth. I have better things to do with my time and money.*

Afterthoughts & Questions and Objections

CS Lewis had a great point in his book Mere Christianity about Prayer and Extra-dimensionality:
One common complaint people make about the concept of God is: How can He listen to ALL our prayers at the same time. I had an atheist on a website mock this once. He said, this God will go crazy if he can hear all our prayers, won't it be deafening for him? Bill Maher asks this question in his upcoming movie "Religulous" [sic].

Response:
But this is not true once we understand extra-dimensionality.
Since God is not constrained by time. He can listen to ALL of 6 Billion of our prayers at the same "time". In fact he can attend to each one of us individually
CS Lewis explained it vividly way back in the 50's:

> Suppose I am writing a novel. I write "Mary laid down her work; next moment came a knock at the door!"
> For Mary who has to live in the imaginary time of my story there is no interval between putting down the work and hearing the knock. But I, who am Mary's maker, do not live in that imaginary time at all.
> Between writing the first half of that sentence and the second, I might sit down for three hours and think steadily about Mary. I could think about Mary as if she were the only character in the book and for as long as I pleased, and the hours I spent in doing so would not appear in Mary's time (the time inside the story) at all.

In fact, the ancient Jewish Rabbis had this idea well established. They said for instance that the 10 commandments were not given in order. They were given all at once, simultaneously in Time. Temporal sequentiality is NOT a limitation for an extra-dimensional being.

So Christians, when you pray, pray in earnest, for you have the Creator of the entire universe attending to you individually and personally. And when you sing praises, sing in earnest, He is listening to you alone and as the Westminster Confessional implies, He is enjoying you.

Objection: But you are coming to this conclusion too early. Science may prove different things to us in the years to come.

Answer: I've heard this objection a number of times, usually from educated people, but this objection may show a lack of understanding of the core of the argument. The argument I have stated is NOT a scientific one. Be very clear about this. It uses science, but it's not a purely scientific one, it's a logical and rational one. Let me explain.

Science is not the fundamental basis for our understanding of the way mechanistic objects act. Logic and reason is. Remember Logic and Reason existed before the universe came into being. They transcend all physical reality and existence. 1+1=2 before the big bang. Thus no amount of new scientific evidence will be able to change the logic behind the fact that an infinitely existing mechanistic object can only do 1 thing in infinity past or do the same thing infinite times. We have covered all RATIONAL possibilities. We are not going to suddenly discover that this logic is wrong. For "new" scientific evidence to refute this argument, they'd have to refute rationality so the only thing left is that they have to show that there are infinite universes.

There is no other option. And since currently the idea of infinite universes existing has to be accepted on blind faith, vs. the idea of an intelligent freewill, Agent X who has crafted a universe that specifically allows us to discover him. I'd say I don't have enough faith to be an atheist.

Objection: After reading this, a Christian friend named Leanne asked: What about people who believe in multiple Universes, could the same[22] singularity indeed be mechanistically creating infinite multiple universes?

Response:
As discussed in this paper the answer is Yes, multiple infinite universes are certainly a possibility and would feasibly explain how we don't need a God, **HOWEVER** there are some major problems with this.
A. There is no evidence for multiple universes.
B. We have no mechanism to explain why or how one singularity could give rise to multiple universes.
C. We would need to explain why one universe would never have any effect on another universe created by the same singularity. i.e. how could one singularity give rise to multiple universes, especially multiple universes that do not intersect in *any* way.

[22] If there are multiple singularities (rather than one) then what caused them and why did they not all mechanistically create the universe in infinity past –we would be back to the same problem as before: Why only 13.5B years ago and not longer? The only way this question becomes valid is if a single singularity was constantly and mechanistically creating multiple universes from infinity past. This would then be a possible feasible answer as to why our universe was only created 13.5B years ago.

So while someone is free to believe that, it would be based on **pure blind** faith vs. a rational faith. In otherwords it would be a belief based on the absence of any evidence rather than the presence of any evidence. Afterall, the atheist cannot see, touch, taste, smell, interact or see the effects of these alternate universes. So if the atheist wants to believe this, then he should admit that he is believing this without any factual basis, just a romantic notion and should admit it's a weaker notion than the fact that there is no evidence of multiple universes. He may as well believe in Pink Floating Elephant Gods who are invisible and carry the globe on their back. But we can't see them because they are invisible and can't be measured.

Meanwhile as I've said the alternative theory of a Free Will Non Mechanistic Extra-Dimensional Agent is a much more rational and scientific if you will theory. I discuss this in much more detail as a couple of individuals read this objection and STILL asked about it. Further responses in the Objections section will deal with this in even more detail.

Objection: (Taken from a book review on Amazon) In his excellent book, NASA physicist Carlos Calle tackles the question of whether the universe requires a supernatural "designer" or whether our cosmological theories can explain the wondrous reality around us.

The standard model of cosmology, in which a tiny piece of inflating "false vacuum" decays into a fireball, and stars and galaxies congeal out of the cooling debris, has passed many tests, but problems remain. Where did the false vacuum come from in the first place? And how do the supposedly enormous quantum convulsions of our current vacuum manage to cancel out to almost - but not exactly - zero, leaving behind a piddling "dark energy" that lies in the tiny range of values that allow life to exist?

Physics and cosmology alone may have the answers, says Calle. Combine eternal inflation, in which the primordial false vacuum continuously grows and decays, with string theory and you end up with a multiverse - a vast collection of universes, each of which has a different amount of dark energy. We find ourselves in one where it has just the right value for stars, planets and life because... well, we couldn't find ourselves anywhere else.

Another cosmological model that has emerged from string theory has our universe living on the surface of a "brane" floating in a higher-dimensional space. Our brane collides with a nearby brane over and over again for eternity, triggering an endless sequence of big bangs. This cyclic model may home in on the exact value of the dark energy we measure.

The model doesn't require a beginning, and some theorists suspect that eternal inflation may not either. Certainly, neither requires a designer. Cosmology still has a lot to figure out, Calle contends, but it is in good shape.

To which a couple of commenters said:

Eric: I hope the book explains why a self-existent, infinite Universe (or "multiverse" to use the fashionable term) is more believable than a self-existent infinite god.

Liza: I can of course not hope to have an explanation for how anything at all could possibly be infinite or eternal, but the self-existent, infinite Universe has a slight advantage that makes it less unbelievable than a self-existent, infinite God: we can observe it. No reliable observations of God have been made so far. Thus, worshipping the Universe makes actually more sense than worshipping God, if any worshipping needs to be done.

Response:
Hopefully the reader has seen the problem in the "commenters" and in Calle's claims. Note too that there are many astronomers out there (even atheists) who are just as educated as Calle who reject his conclusions.
1. Any time Calle postulates a source, i.e. branes or quantum convulsions or vacuum that grows and decays or whatever that cause is, think "Non-Mechanistic First Cause".
And as such needs to fulfill all the requirements of the "spinning top" example, which it can ONLY do if there are infinite universes.
2. So Calle realizing this has to fall back on multiverses and infinite universes. As that's the ONLY way to explain our "just right" universe. But he also realizes that he cannot prove these infinite universes so he falls back on saying well we still have a lot to figure out but we are in good shape.

But this is simply the Science of the Gaps i.e. our science leads us to two improbable conclusions so we'll just take the more improbable one and wait for the evidence. Surely the opposite is the more logical conclusion. We have to go with what science and common sense reasoning tell us, take the more probably of the two.

Ah but you say: How is God the less improbable one? Why is the God postulate more probable? For that read the next objection.

Objection: But multiple universes blows your entire argument to bits. Or All you've done is show that multiple universes are just as likely as God or the Freewilled Agent. I think it's easier to believe in a multiverse.

Response:
As I noted yes there are only 2 options:

1. A freewilled personal non-mechanistic agent X
2. Multiple universes.

First let's clarify the problems with the Multi-verse theories.
Any theory of infinite alternative universes you propose has this MAJOR problem:
You can't touch them,
You can't smell them.
You can't taste them.
You can't feel them
You can't see them.
You can't measure them.
You can't calculate their existence.
You can't electro-magnetically, gravitationally or use sonar to sense them.
You can't interact with them.
And unlike the multiple dimensions of the universe you can't calculate or derive any actual details or characteristics of these universes. It's true you can postulate some nice to have features, but you cannot derive any actual details.
And before we stop remember, one other universe is not sufficient. There HAS to be infinite other universes. A million universes is too little, a billion doesn't work either. You need infinite universes.

And what's worse. The Multi-Universe theory is not scientific. Why do I say that? Well quite simply: I can't falsify it. Can you show me a test that would falsify the multi-verse theory? There is none that we know of currently. So therefore the multi-verse theory is currently quite unscientific. If you believe it, you have to believe it on faith in the lack of any evidence. Are you sure that to a super skeptic like me you really wish to posit an unscientific BELIEF as your best argument? You'd have a lot more guts than I do to try and stand on this fact. Especially as this belief may have some serious long term consequences.

So you have to admit without any evidence one must BLINDLY believe the multiverse exists. If you really are like me: I..e it has to be proven before you will believe it, surely you can see why I think blindly believing in multi-verses is a bit too "religious" for me. It's almost fanatical. I.e. it's like some cult leader telling their followers that the Comet Halley Bopp has a spaceship hiding behind it that you can't see, touch, taste, smell, hear, measure etc. "But believe you me…it is there. Now go put on your Nike's and track suits and then drink this poison so we can get on board." Sorry man, but I am not a cool-aid drinker. I want to see evidence. I hope you understand my skepticism.

Here's another problem, isn't this the same thing that Atheist have been complaining about for centuries about God. They say: Hey you can't touch, smell, taste, feel, see or interact with God. So therefore God doesn't exist. But here in one swell foop (:) ok one fell swoop), they say hey we don't believe in God for these reasons… but trust me: Multiple Universes really really really do exist. I can't prove it. But trust me blindly using the same reasons. You have to have faith in those multiple universes. I hope I'm articulating that clearly enough.

Secondly when we add the fact that the earth is designed for discovery. This would be true if the earth were not designed for discovery. But if the Earth IS designed for discovery now you have a compound problem. First you need multiple universes. Some of which allow life to evolve just so. Second you need to be in the one universe where earth ended up designed for discovery.

And if there are multiple universes then you are postulating that in many of those universes the planet where intelligent life exists is not designed for discovery. (This point is repeated from a previous objection).
But there are other problems with infinite multiple universes (note you have to have infinite multiple universes as the option of have a few other universes defeats your position, it has to be infinite).

First if there are multiple universes then by necessity there are universes where earth exists but every alternate option has been

taken. Every alternate and possible event has occurred. For instance in any given situation there has to be a world where if one person predicts the future it always comes to pass. Where a single person wins every single lottery. Where any time anybody randomly picks a card from a deck it is ALWAYS the Ace of spades. Regardless of how many times it has been shuffled or how many times it has been tried. In this universe the laws of probability do not exist because they are the one universe where the probability is always violated. There is another universe where anytime someone tosses a coin it always comes up heads. Even when they make a machine to toss coins and see what comes up and they do it a billion times it comes up heads. Remember we are dealing with infinite multiple universes. **So that means the probability is 1 than any scenario that we can envision would be true somewhere in some universe.** Are you having as much trouble as I in believing this? It is necessary that for every decision you made, there is an alternative universe that evolved in the exact same way but at the point of your decision, the you in the other universe picked one of the other myriad of choices and thus differs in only that way. It gets even more fantastical as you think on it more.

Now you may be tempted to say: Ah but then we are on equal ground. You can't prove God exists and I can't prove multiple universes exist. But I think that's where you may have forgotten the unsaid points of this argument. There are at least six other weighty arguments for the existence of God. These arguments show that of the two options, i.e. infinite universes or an infinite being, the God Hypothesis is the more probable one based on the evidence. I.e.

1. The Impossibility Argument: Mechanistic abiogeneisis is impossible at the worst, but unscientific at the best (i.e. not repeatable or provable) but Atheists must IRRATIONALLY insist it is possible even though we can scientifically prove that it never happens naturally (even the Miller experiment has been disproved and that didn't create life, it created amino acids. Of course saying that amino acids are equivalent to life is as ignorant as when Darwin thought that living cells were merely some globs of protoplasm vs. the huge complex factories that we now know they are.)

2. The Moral Argument i.e. If Objective Moral values exist then God exists. Objective Moral values DO exist, thus God exists. See www.williamlanecraig.com for more on this.

3. The Christological and Historical Argument. i.e There's good historical evidence for the authenticity of the New Testament gospels. The gospels and history gives good evidence that Jesus Christ is God. Therefore, there is good historical evidence that Jesus Christ is God. See www.williamlanecraig.com for more on this.

4. The improbability of evolution argument: Atheists posit that evolution though the odds are stacked against it, it happened.

5. The intelligence argument: All science EXCEPT for evolutionary science, currently tells us that any thing that looks like it was intelligently design must be intelligently designed. E.g. signals that SETI is looking for. So take the coding of DNA. Sure it "may" be un-designed, but how reasonable is it to think that? Talk to any murder scene investigator and ask them, if it looks like someone manipulated physical objects so they fell and killed someone, only a incompetent CSI agent would imagine that it only "looks designed but is a natural phenomenon" as the primary explanation to the murder. We don't function this way in our daily lives. Why do it when it comes to science?

6. The issue of how the Biblical text just happens to be able to predict the Big Bang prior to science being able to tell us this. And lest you say ah but ALL creation myths start that way it's natural for everyone to want a beginning. But that is simply not true, it's only the Judeo-Christian Creation that has a transcendent extra-dimensional God who creates out of nothing. In every single other culture their creation is made from pre-existing materials as we've discussed earlier. It's only Christianity that has a God that creates Time. All other religions don't even understand the concept of a timeless beginning.

Naturally, I only introduce these points here as space does not permit providing any arguments here. For arguments please email me. (Arguments? Ah yes, you want room 12A, Just along the corridor).
Note you may argue that if we had infinite universes then even all of these could feasibly have happened randomly. But if I were playing poker with you and I kept coming up aces, and when you questioned me, I said "Well my friend we just happen to be in that one universe where I always come up Aces." Are you going to buy that? (If you would, let's play poker right now.) But you see the silliness of this? At some point reality needs to kick in my friend. You don't live your life this way. We would not want our governments or police to either.

Now of course you are free to disagree with any of these 6 points but if you are a thinking person you should give them skeptical due diligence. While none of them prove that God exists without any doubt, when ALL of them are put together it becomes more reasonable to believe that a God exists that to have BLIND faith that infinite universes exist that cannot be proved in ANY reasonable way. In other words what I am claiming is that there is more rational weight on the side that some sort of intelligent agent exists than on the side that a multi-verse exists. I don't expect you accept this, but I hope you at least see that the overwhelming evidence seems to be on the intelligent agent side.

And of course add to that this entire Agent X argument which can be summarized as:
The first cause has to be eternal, powerful enough to create a universe, non-mechanistic, free-willed, extra-dimensional, personal enough to want us to discover him and knowledgeable enough to create a fine tuned universe.

At the least you have to admit that you are forced to have as much blind faith in multiple universes as a theist in an unknown God. At which point our friend Blaise Pascal's premise starts to make good sense. I.e. bank on avoiding the most disadvantage[23].

Objection: What about the Quantum Universe Theory?

Response:
The Quantum Universe Theory is almost the same idea as the previous idea. It says that there are infinite universes in infinite dimensions and they are constantly multiplying. The basic idea is that anytime a decision is made, a new universe springs up for each possible action of that decision. This some atheists may posit as evidence that the first cause is a mechanistic agent constantly giving rise to universes. BUT here's the problem. Atheists can't ***prove*** the Quantum Universe Theory; they have no evidence of it in science. It's a nice theory with no evidence, it's great science fiction. But it's fiction. We'd call that blind faith. So they are welcome to believe that if they want. But then they need to accept the fact that their basis of beliefs is also based on a blind faith. And they must not accuse us of being the only ones with a faith, even though I would argue we have more evidence for our faith than they do for theirs.

Note that this answer also covers a gamut of issues that postulate un-provable theories of mechanistic agents. You can add mechanistic agents behind mechanistic agents behind other mechanistic agents but you end up at the same place. You need a non mechanistic agent OR you need infinite universes. One is illogical and the other is un-provable and in fact contrary to all the existing evidence. And thus if you are believing something contrary to the evidence that is called Blind Faith. If you are truly an atheist, blind faith would be a horrible thing to believe in, wouldn't it.

This theory also has a lot of unbeliveable side effects. For e.g.
If there are multiple universes then by necessity there are universes where earth exists but every alternate option has been taken. Every alternate and possible event has occurred. For instance in any given situation there has to be a world where if one person predicts the future it always comes to pass. Where a single person wins every single lottery. Where any time anybody randomly picks a card from a deck it is ALWAYS the Ace of spades. Regardless of how many times it has been shuffled or how many times it has been tried. In this universe the laws of probability do not exist because they are the one universe where the probability is always violated. There is another universe where anytime someone tosses a coin it always comes up heads. Even when they make a machine to toss coins and see what comes up and they do it a billion times it comes up heads. Remember we are dealing with infinite multiple universes. So that means the probability is 1 that any scenario that we can envision would be true. Are you having as much trouble as me in believing this?
I have one question about that universe? Are there any atheists in that universe? As in that universe, probability seems to never exist for certain scenarios. Anytime someone prays for certain probabilistic things it comes to pass. E.g. in those universe every time you buy a lottery ticket and pray you win. Any game you participate in, you win. I'd think there would be no atheists in that world.

Are you seriously proposing this? Actually it would make a good Twilight Zone episode.

Objection: What about the Bud Theory?

Response:
The Bud theory is a theory that says we are a blip in a vastly larger universe. Or there are infinite smaller universes but they mechanistically reproduce by creating a small bud that breaks off from it's parent universe only every trillion years or so and form into another infinite universe. Again the problem here is we have no proof for these theories. And if you do subscribe to Occam's Razor[24] which most atheists do, then you have to ask for the simplest theory. We can argue all day if the simplest

[23] Pascal said: God either exists or He doesn't. Either I believe in God or I don't. Of the four possibilities, only one is to my disadvantage. To avoid that possibility, I believe in God. Quoted in Des MacHale, *Wisdom* (London, 2002).
In other words: If I don't believe in God and there is one, I go to Hell, but if there isn't one, it's not a big deal. So why take a chance, hell is bad.
This challenge is valid if you have come to a fork in the road and have to choose one. But note the standard atheist response of: "Well why not say the same about worshiping the pink unicorn." Here's why, you don't have these 6 arguments noted here in defense of the pink unicorn. If you did and it was a better argument than God then go for it believe in the pink unicorn. It'd be stupid not to.
[24] Occam's (or Ockham's) razor is a principle attributed to the 14th century logician and Franciscan friar; William of Occam. It basically says: "When you have two competing theories which make exactly the same predictions, the one that is simpler is the better."

theory is a non-mechanistic agent or an infinite number of mechanistic ones or infinite universes or a small part of an even more larger infinite universe. But the current evidence does not support this theory, so we may as well blindly believe that the great Serpent Spirit created the world as some cultures do. That blind belief would be equally as valid.

Objection: I don't accept the Big Bang Theory? (yes I've had atheists tell me this).

Response:
If you are an atheist and don't accept the Big Bang Theory, your argument is not with me but with Lemaître, Hawking, Einstein, Hubble, Michealson, Morely, Friedmann, Gamow, Alpher and Herman and many many others. As it is the current accepted theory in science, you would be arguing that you don't believe in what is accepted in science and instead are going with your own gut feelings. I call that blind faith and would like you to note that this was an argument that many atheists use against Christians when it comes to evolution. I..e we refuse to accept the "science" of evolution and that indicates we are superstitious. So to turn the tables, I would be forced to say, if you refuse to accept the science of the Big Bang that is more validated that evolution (as it is predictive unlike evolution), then surely you would be more superstitious.

But let me go a step further and get this straight: You don't accept the Big Bang Theory which is provable, measurable, and various parts are testable but most important it made predictions that we were able to confirm. Yet you accept Evolution which is not provable and has not been able to predict anything that couldn't be attributed to a different cause. I think this indicates that perhaps my friend you are condemning a strong theory and accepting a weak theory because you don't like the consequences of the logic, not because of inherent problems in the theory.

Objection: I don't accept the Singularity?

Response:
See the response further on provided by William Lane Craig.

Objection: Aliens did it (i.e. create the Universe).

Response: This theory does not fit the facts that we know about Agent X, for one because Aliens would be multi-dimensional and not EXTRA-dimensional. Agent X would have to exist outside of time and space. If your aliens exist within the universe then they do not predate the universe and therefore do not qualify. If you are postulating extra-dimensional aliens then you'd have to show me how they differ from God. Also see the paper on my website www.NoBlindFaith.com under writings (not sermons) called "Can God create a stone so big that he cannot move it." In there I show using simple set theory that only a single all powerful being can exist, as multiple all powerful beings are self refuting and self contradictory. So you'll end up with only 1 "alien" that is no different from the Biblical definition of God. So if you really wish to call this God an Alien, that's fine. He's certainly not terrestrial.

Objection: I don't accept the fact that every thing that began to exist needs a cause?

Response:
What! Seriously? Are you a 16th century superstitious peasant? I don't believe that you believe that. OK sorry, I just had to say that.

Let's look at this carefully, I've heard this articulated as:
Of the staggeringly large number of things that exist, a vanishingly small number of them have been seen, or inferred, to have been caused. Observational bias leads humans to believe elsewise.
I have no idea whether atoms are blinking in and out of existence all around us, though I'd guess it's not that common. Your statement might be correct, but you don't have - can never have - enough data points to prove it.
If we can't observe beyond the boundary of the start of the universe, the best we may ever be able to do is speculate whether it popped into existence (here he tries to claim there's a multiverse that caused everything). *A non-cause is far more reasonable than an intelligent cause, otherwise you'll need to explain to me the cause for your first cause.*

My Response: It would seem that you are saying that you believe things randomly and supernaturally (it's certainly not natural) arise from nothing and have no cause, or that some initial universe that creates other universes supernaturally arose from nothing. You cannot prove these other universes exist, you can't calculate them, smell them, taste them, touch them, interact with them, see them, use instruments to detect them. But you are firmly convinced that this invisible spaghetti monster exists and is the source of everything you CAN see touch taste smell hear and calculate.

I hope you forgive me for thinking this seems a bit like a superstitious ancient animistic belief more suitable to a peasant 1000 years ago (I hope you don't think that's an ad homimem).

Most atheists before the 1950's would vehemently disagree with you. In fact the premise they declared themselves was that anything that began to exist needed a cause. It was the basis for their insisting that the Universe had existed forever.

It seems that the only reasons a few atheists today try to posit that everything that begins to exist does NOT need a cause, (a concept that would be utterly laughed at a few years ago, trust me you wouldn't get a science tenure with that sort of a statement …ok perhaps till recently), is because they don't like the consequence of the logic. But as long as they thought the universe was eternal ALL atheists embraced that very statement. So forgive me if I think it's a bit weak to try and say that isn't true now that it hurts your case. And if this is the atheists strongest argument, I have to simply say wow their situation is more dire than we imagined.

Secondly if this is your premise, then the burden of proof is on the one making this unscientific baseless unprovable claim.

You see for years atheists said to Theists, the burden of proof to prove that an unseen entity exists is upon you, because it's very unusual and there's no evidence for it and it doesn't happen everyday.
Now they turn around and try to say: "Ah but perhaps things suddenly pop into existence on their own out of nothing."

So in answer do let me just say back to you what Atheists used to say to me: The burden of proof to prove that things pop out of nothing is upon you the atheist, because it's very unusual and there's no evidence for it and it doesn't happen everyday and what's worse I can show you that it has never happened in all of recorded history or scientific experimentation. For you to still maintain this is true is blind faith at the least, ignorance at the worst, and unscientific in every way.

If that statement was good enough for you to abandon the concept of God, then it certainly is good enough for you to abandon your concept of things simply popping into existence out of nothing.

I must tell you but I can't imagine you actually believe that and are only taking this ignorant peasant point of view because you fear the logical consequences of what science tells us.

Let me address this line specifically though: *"A non-cause is far more reasonable than an intelligent cause, otherwise you'll need to explain to me the cause for your first cause."*

Remember you can't turn around and punt this back at us saying: Well what was your God's cause then? Here's why, if you noticed the premise for science was that anything that **existed forever** needs no cause. Only things that began to exist needed a cause. Again to repeat, back in the 50's Atheists thought the universe existed forever and needed no cause they didn't go around asking what caused the universe. In the same way God existed forever and needs no cause.

Furthermore, the objection stated has nothing to stand on because you are not comparing apples to apples. Either you have an eternal mechanistic cause or you have an eternal non-mechanistic cause. But in BOTH cases you have an eternal uncaused cause. And in fact there is no logical or rational room for a non eternal uncaused cause...anywhere in science or philosophy.

Objection: Quentin Smith, a well known atheist has claimed that Hawking has proposed a Wave Theory model of the universe that shows the Universe is 95% probable without a first cause.

Response:
Quentin Smith's proposal fails the most basic test of the Agent X proposal. In his proposal he posits a timeless space which is a 4-dimensional hyperspace near the beginning of the universe. He says it is smaller than 10^{-35} meters in radius. He says that this hyperspace gave rise to the universe and it has always existed.

But here's the problem. First there is no evidence of this hyperspace and secondly even more damaging, this proposed "Smithian" hyperspace is a mechanistic agent. It has no freewill and Smith has merely posited a mechanistic first cause that we have already dispensed with. He's merely pushed the problem back one more step. But that gains him absolutely nothing. And it violates the basic principles of Physics. Remember if a mechanistic agent was going to give rise to the universe it would have done so in infinity past. This means the universe would be infinitely old. But it isn't infinitely old. The other option as we have said is that the mechanistic agent would continue to give rise to infinite universes but as we've pointed out this fails on multiple fronts. But Smith's proposal also violates the theory that at the point of the singularity there was no time, no space, no other dimensions. So that seems to violate the entire theory of the big bang and goes against science? So Smith's basic premise fails

the very simplest test and is un-scientific and thus is not a rational explanation for the beginning of the universe. Quentin Smith can make his mechanistic agent as small as he wants and as far back as he wants, but it's still a mechanistic agent with no free will and thus should have either given rise to the universe an infinite time ago or have given rise to infinite universes. Since all evidences show the contrary of that one can only surmise that Quentin Smith has blind faith in something un-provable and contrary to the evidences we have. I call that blind faith.

Objection - the Time/Knowledge question: In a college debate with some students that I was assisting, one of the atheists asked this question: **How can you say that God existed before time? If there was no time he could not have learned anything. Then how did he get the knowledge he needed to create the universe and be God?**

Response:
The truth of the matter is that this is a meaningless question. Of course, convincing an audience of this in a few seconds is another matter completely. But here's one way to provide the answer:

You are asking what happened before time began. You are asking me to philosophize about the possible explanations of "How Agent X knows what he knows." But in reality that is irrelevant. Let me explain:

1. First the question is similar to a 2 dimensional being asking why a 3 dimensional being is not limited by 2 dimensions. The 2 dimensional being will have trouble understanding the exact nature of the 3 dimensional being and would have great difficulty imagining how the 3 dimensional being does something. To bring it back to the question: What you are asking in that question is "Why is Agent X which is outside of time not limited by time?" See the silliness here?

   Remember too that Agent X precedes the Universe causally but not temporally. For time did not exist at the point of the creation.

2. Secondly, I never said that we know ALL the characteristics of Agent X. We derived the necessary conditions (i.e. freewilled, non mechanistic omnipresent, omnipotent, omniscient, personal), we did not derive ALL the conditions. Nor did we say that I can explain where Agent came from because that is a meaningless question. In fact my case rests on the fact that Agent X did not have to COME from anywhere as we have repeatedly said. In the same way, why is it not possible for Agent X to not have to LEARN either? And since Agent X is necessary for the Universe to exist, it is not unfathomable for science that Agent X always existed just like it **was** not unfathomable for science that the universe always existed.

   So I must ask: Are you trying to refute the premise that anything that always existed needs no cause or beginning? If so you have a lot more people to convince than me. I.e. the bulk of the scientific community.

   Furthermore, why don't you apply that rational to the Universe? You see until we discovered that the Universe had a beginning we also accepted that fact that the Universe had no beginning, yet we didn't see any arguments from your side that the universe had to grow to exist. Are you as a sole individual against the standard scientific thought, changing the requirements now? You may choose to do so but please do not assume that you are doing so logically or scientifically unless you can prove what you say. Until that point what you say is purely an opinion and not a rebuttal.

3. Thirdly, your argument indicates a linear form of thinking (like Khan[25]). Remember if there is no time, you cannot impose a linear sequence of events on things like learning. Nor can you impose it on non linear beings. The non-mechanistic first cause that is required to bring about the singularity is a non linear entity not constrained by time or space or perhaps any dimensional constraints. In addition, it is feasible to imagine causality ***without*** time. To use an example from William Lane Craig: A ball on a cushion causes an indentation on the cushion, yet you cannot say the ball was on the cushion before the indentation occurred. Yet we all can see the ball is the cause atemporally of the indentation. Here is causality without time.

   More over if you give credence to Multiverses or collapsing and expanding universes which you HAVE to, to hang on to the idea that there is no freewilled first cause, then what happens in between the collapsing and expanding. If time stops how did the next expansion start? Or if one universe gives rise to another and physics says at the start of each universe there was no time, then how did the next universe start if time stopped? Did it only stop in the new spawned universe? See the illogic?

4. At the point of the singularity, there was no time there was no space. Yet the big bang occurs. Using your argument the big bang could never occur because time did not exist yet. However, we know the big bang occurred and we know that

[25] As in "Wrath of" ..OK this was too tempting.

causally prior to time coming into existence there was no time. Thus, there are things here that you cannot conceive off but can occur causally. God does NOT become impotent when he is outside of time, not any more than the singularity was impotent to cause or develop into the big bang. In addition, using that argument you are then trying to argue that the singularity had no cause and we know anything that begins to exist needs a cause. The singularity began to exist so it needs a cause. (Of course you could try to argue that the singularity IS agent X, but we've already proven it can't be because it's mechanistic).

5. Agent X and Learning: As we said Agent X has always existed thus he does not need to learn. Just because you as a human need to learn that does not mean Agent X needs to learn. You will die one day. Agent X cannot die because he is outside of time. There are a myriad of differences between you and Agent X. Thus there is no logical or rational reason to impose your limitations on Agent X or require this to be true. In fact no other scientist sees this as a requirement. So why do you wish to bring an unscientific requirement into the mix? It seems your thinking is trapped in a small box.

Objection: How can you argue about what happened before the singularity? Nobody knows what happened before it, it's meaningless to argue it. Or: How do you know that all the laws of physics and causality don't break down before the singularity?

Response:
If you'll forgive me, this seems to be simply a copout. We cannot say that we just do NOT know what happened before the singularity and thus beg off the discussion. True, the laws of Physics do not apply because they are materially/dimensionally constrained. However logic and rationality still apply, they are not limited to time or space. You would have a tough time on your hand to argue that prior to the singularity, logic and rationality cease to exist. (i.e. 1+1 was not equal to 2). Why? Because it hurts the atheist's case. If logic ceases to exist before the singularly why are you trying to argue *logically* ABOUT logic ceasing. Thus "logically you cannot apply logic" to "logic not being valid" prior to this point? This is a self-refuting statement also known as a Suicide Statement (see my paper on Suicide Statements at www.NoBlindFaith.com for some fun with other suicide statements like: There is no absolute truth, or "It's wrong to force your morality on others").

So since we ARE logically trying to explain what happened before the singularity, we can logically argue everything we have logically presented so far about the cause of the singularity is indeed logical (hmm…sounds like we are just repeating ourselves). Do my Atheist friends really want to propose an illogical and thus feelings based or blind faith solution to events before the singularity? I thought that was the accusation against us Theist. Have the tables turned?

But my atheist friends may insist: That's the point: at this point logic ceases to exist so we cannot argue anything about it.
So even if we ignore the illogic of this statement our friend the atheist still has a problem. He has now got to admit that despite the very logical argument that we have presented, he has abandoned that argument for one that has no logic. Again I'm not sure about you, but given two theories, one that appeals to illogic and one that appeals to logic and fits the observable data, I'd stick with the latter. As Spock would have said: "It is …after all… logical." Remember what we are saying is that our derivation is more scientific, logical and reasonable that yours.

Objection: But if God is outside of Nature then God cannot be logical or rational. Because logic and rationality came into being at the singularity.

Response:
But this is just false as we've shown. You can't logically argue about something if you say that logic ceases to be logic at some point.
The more rational thought is that logic and rationality have ALWAYS existed and are NOT part of the supernatural universe.
For instance. 1+1 is not part of the natural or physical universe. There are no feasible universes where 1+1 = 3. Thus 1+1 is a transcendent truth. And if you believe in the multiverse (as your excuse to avoid believing the freewilled Agent X) then are you suggesting that there are zones in between those universes where 1+1 is not = 2? This is irrational, whoops there's that word again.

In fact while I won't spend time on it here, we could easily show that rationality has to be a characteristic of the first cause. Just like we proved omniscience, and omnipresence, a logical argument can be used to derive a number of other characteristics of the first cause (not all, but a fair number) e.g. Rationality, Logic, Mathematical principles, Moral principles etc. all these are inherent and necessary characteristics of the first cause.

Objection: But in your example of a mechanistic Agent X, you said that if the agent was mechanistic the universe would be eternal. But why is this true if there was no time before the universe was created.

Response:
Once the universe was created, time would begin to exist. Once time existed then the mechanistic agent would coexist alongside time and you could measure time. Thus if the universe was created by a mechanistic agent, it would have done so for sure whenever "outside" of time it was going to do so, but once it had done that, time would exist and we'd be able to see that the universe was eternally old and so was time. Ah…you were going to give me a non-mechanistic objection i.e. what if the agent had just decided to do it recently…whoops…mechanistic agents can't DECIDE. OK rephrase, what if the mechanistic agent had just by chance done it recently. That doesn't work either because if the mechanistic agent WAS going to do it, even if the probability was 10^{-2B} it would have happened in infinity past, because again once a universe was created, time would exist and the countdown would begin. In other words with infinite probability and infinite causality the universe would have occurred and time would have begun infinitely ago. You would have to come up with a reason why this causality MUST be ONLY13.5B years ago and not before. Now you may reject this argument so I think it's of value to repeat a response from William Lane Craig:

> "In fact, I think that it can be plausibly argued that the cause of the universe must be a personal Creator. For how else could a temporal effect arise from an eternal cause? If the cause were simply a mechanically operating set of necessary and sufficient conditions existing from eternity, then why would not the effect also exist from eternity? For example, if the cause of water's being frozen is the temperature's being below zero degrees, then if the temperature were below zero degrees from eternity, then any water present would be frozen from eternity. The only way to have an eternal cause but a temporal effect would seem to be if the cause is a personal agent who freely chooses to create an effect in time. For example, a man sitting from eternity may will to stand up; hence, a temporal effect may arise from an eternally existing agent. Indeed, the agent may will from eternity to create a temporal effect, so that no change in the agent need be conceived. Thus, we are brought not merely to the first cause of the universe, but to its personal Creator".
>
> http://www.leaderu.com/truth/3truth11.html

Objection: But if we think of non-time as a line. Then any point on that line in eternity would be simultaneous with any other point. Thus whenever time began it would begin and then it would take 13.7B years for life to evolve and that life to then realize the universe was 13.7B years old.

Response:
While this does not solve the "eternality" problem that Craig discusses in the last objection it still does not get you out of the infinite universe problem. Here's why: When you add the fine tuning of the universe, the fine tuning of earth, the location of earth for discovery and abiogenesis, you realize the only way this could work is if there were infinite universes and we are one those of them that worked and it never works for the other arguments like the moral argument, and the resurrection argument. So you are back at we just happened to be on the universe where you are the atheist and I am the Christian, in another universe, I'm the atheist and you are the Christian. Does this sound more reasonable to you? It does *not* to me.

Objection: But new Quantum Physics disproves the singularity; or You are behind the times. The Big Bang theory you posit is old news. Now they don't think there ever was a singularity, things have changed.

Response:
Actually, this is not true. To provide the best answer I've provided the response that Dr. William Lane Craig provides on his web page. The answer is rather technical but at the least you can email it to someone after you have chatted with them to show them that this objection does not work.

> **Question 48 (from www.WilliamLaneCraig.com)**:

I recently was told by some physicists whom I had the chance to interview for a paper that the standard big bang model of the universe does not include a singularity anymore. That may have been the case twenty five years ago, they said, but nowadays physicists say that the big bang extends only back to Planck time. Can you PLEASE clarify the confusion I'm having on this?

God bless,

Glenn

Dr. Craig responds:

I'm just in the process of wrapping up an article on the *kalam* cosmological argument co-authored with James Sinclair for a forthcoming volume with Blackwell entitled *Companion to Natural Theology*. Jim is writing the section on the empirical evidence of astrophysical cosmology for the beginning of the universe. He does a marvelous job of summarizing the current state of the field, a preview of which I'll give you here.

First, though, in answer to your question, the standard Big Bang model includes an initial singularity. The model cannot lose that feature and remain the same model. So there's no question of the standard model's not including a singularity anymore. Rather what the physicists you interviewed meant is that the standard model is no longer the prevailing view today. Their claim is that while the standard model was the accepted view 25 years ago, that is no longer the case today.

Now in one sense that's true. The standard Big Bang model needs to be modified in various ways. For example, the model is based on Einstein's General Theory of Relativity. But Einstein's theory breaks down when space is shrunk down to sub-atomic proportions. We'll need to introduce quantum physics at that point, and no one is sure how this is to be done. That's what your physicists meant when they said that the Big Bang extends back only as far as the Planck time. (That, by the way, is no new realization; everyone always knew that General Relativity breaks down by that point.)

Moreover, the expansion of the universe is probably not constant, as in the standard model. It's probably accelerating and may have had a brief moment of super-rapid, or inflationary, expansion in the past.

But none of these adjustments need affect the fundamental prediction of the standard model of the absolute beginning of the universe.

Indeed, Jim's survey of contemporary cosmology reinforces just how robust the standard model's prediction of an absolute beginning continues to be. He considers three broad research programs being currently pursued based on possible exceptions to the Hawking-Penrose singularity theorems, which support the standard model's prediction of an initial cosmological singularity. These are (1) Closed Timelike Curves, (2) Violation of the Strong Energy Condition (Eternal Inflation), and (3) Falsity of General Relativity (Quantum Gravity). The first of these postulates an exotic spacetime which features circular time in the past and so is not taken very seriously by the vast majority of cosmologists. The real work has been on the other two alternatives.

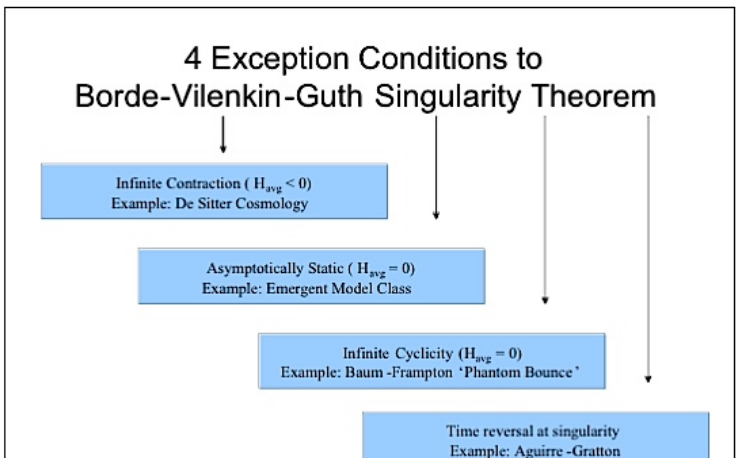
With respect to the alternative of Eternal Inflation, it was suggested by some theorists during the 1980s that perhaps the inflationary expansion of the universe was not confined to a brief period early in the history of the universe but is eternal in the past, each inflating region being the product of a prior inflating region. Although such models were hotly debated, something of a watershed appears to have been reached in 2003, when three leading cosmologists, Arvin Borde, Alan Guth, and Alexander Vilenkin, were able to prove that *any* universe which has, on average, been expanding throughout its history cannot be infinite in the past but must have a past space-time boundary.

What makes their proof so powerful is that it holds *regardless* of the physical description of the universe prior to the Planck time. Because we can't yet provide a physical description of the very early universe, this brief moment has been fertile ground for speculations. (One scientist has compared it to the regions on ancient maps labeled "Here there be dragons!"—it can be filled with all sorts of fantasies.) But the Borde-Guth-Vilenkin theorem is independent of any physical description of that moment. Their theorem implies that even if our universe is just a tiny part of a so-called "multiverse" composed of many universes, the multiverse must have an absolute beginning.

Vilenkin is blunt about the implications:

*It is said that an argument is what convinces reasonable men and a proof is what it takes to convince even an unreasonable man. With the proof now in place, cosmologists can no longer hide behind the possibility of a past-eternal universe. There is no escape, they have to face the problem of a cosmic beginning (*Many Worlds in One *[New York: Hill and Wang, 2006], p.176).*

Some current cosmological speculation is based upon attempts to craft models based upon possible exceptions to the Borde-Guth-Vilenkin condition that the universe has on average been in a state of cosmic expansion. In his article Jim provides the following chart of possibilities:



The first case involves an infinite contraction prior to the singularity, followed by our current expansion.

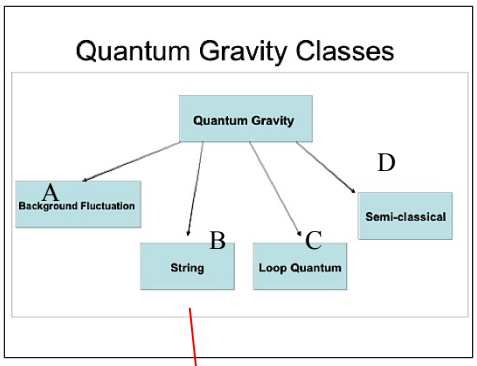
The second case postulates an unstable initial state followed by an inflationary expansion.

The third case imagines a contraction followed by a super-expansion fueled by 'dark' energy, with the universe breaking into a multiverse.

The fourth case postulates two mirror-image, inflationary expansions, where the arrows of time point away from the cosmological singularity.

Jim shows that these highly speculative models are all either in contradiction to observational cosmology or else wind up implying the very beginning of the universe they sought to avert.

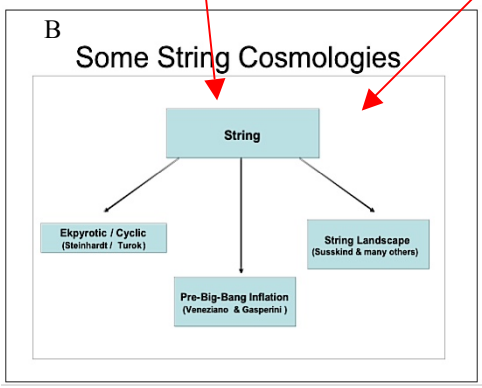
The other alternative to the Hawking-Penrose theorems that has been vigorously pursued is Quantum Gravity models. Jim provides the following chart of such models:



The first class of models postulates an eternal vacuum space in which our universe originates via a quantum [background] fluctuation [see A]. It was found that these models could not avoid the beginning of the vacuum space itself and so implied the absolute beginning of spacetime. These models did not outlive the early 1980s.

The second class, string theoretical models, [see B] have been all the rage lately. They are based upon an alternative to the standard model of particle physics which construes the building blocks of matter to be, not pointlike particles, but one dimensional strings of energy. Jim discusses three types of string cosmological models:

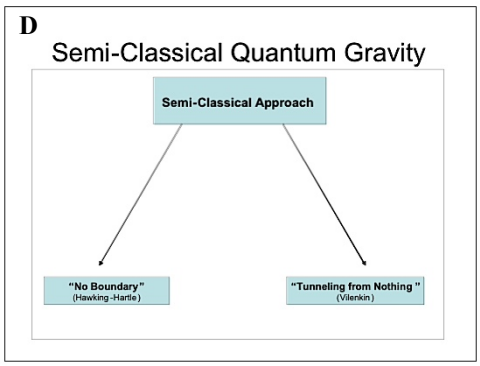
1. The first of these string cosmologies, **Ekpyrotic** cyclic models, is subject to the Borde-Guth-Vilenkin theorem and so is admitted to involve a beginning of the universe.
2. The second group, **Pre-Big Bang** models, cannot be extended into the infinite past if they are taken to be realistic descriptions of the universe.
3. The third group, the **String Landscape** models, feature the popular multiverse scenario. They are also subject to the Borde-Guth-Vilenkin theorem and so imply a beginning of the universe. Thus, string cosmological models do not serve to avert the prediction of the standard model that the universe began to exist.



The third class of Quantum Gravity models, **Loop Quantum Gravity** theories [see C in the second diagram], features versions of a cyclical universe, expanding and contracting. These models do not *require* an eternal past, and trying to extend them to past infinity is hard to square with the Second Law of Thermodynamics and seems to be ruled out by the accumulation of dark energy, which would in time bring an end to the cycling behavior.

Finally, fourth, the Semi-classical Quantum Gravity [see D] models include the famous Hartle-Hawking model and Vilenkin's own theory:

These models feature an absolute beginning of the universe, even if the universe does not come into being at a singular point. Thus, Quantum Gravity models no more avoid the universe's beginning than do purported Eternal Inflationary models.



In sum, I think you can see how misleading the physicists' statements to you were. The prediction of the standard model that the universe began to exist remains today as secure as ever—indeed, more secure, in light of the Borde-Guth-Vilenkin theorem and that prediction's corroboration by the repeated and often imaginative attempts to falsify it. The person who believes that the universe began to exist remains solidly and comfortably within mainstream science.

Objection: But most people don't define God as an extra-dimensional free-willed non-mechanistic being?

Response: Are you serious? Just because they don't use those words it doesn't mean that's not their definition. Look I have a

horizontal transportation device that has an internal combustion engine that uses vulcanized pneumatic wheels that use friction along a plane to give it vectorized acceleration in the x axis. If we were to work that out into plain English you'd have a car. Sure that's long winded description not what most people call it, but that's one possible technical description of it. If I were to work backwards or forwards, I'd still end up with the same thing. So it's irrelevant that they don't use the technical words.

Do most Christians people believe that God is omnipresent? Yes, well then extra dimensionality seems to allow that. Do they think he has a freewill? Well then he's non-mechanistic. Do they think he has a mind? Then he is not a mechanistic machine or a photon. Do they think He wants a relationship with Him? Then he's personal. I'm not sure what the complaint is here. That's what they envision him to be, who cares what the technical terms are. They are still accurate descriptions.

But at the end of the day even if NOBODY thought of God that way, that means nothing. As an atheist and part of a minority you surely don't believe that what the majority believes is not automatically true? We've determined the character of Agent X. They atheist says this agent does not exist against all the current scientific proof. So what will you do about it now? Abandon it for a superstitious multi-verse theory that can't be proven?

Objection: Our space-time started with the Big Bang but that doesn't mean other universes' time didn't exist before us or doesn't exist at the same time as us.

Response:
But this is the fundamental problem here, no one can prove this other universe exists. It's un-falsifiable and thus unscientific. But in contrast we KNOW certain things scientifically about OUR Universe and rationally about the cause of our universe (as shown in this paper). As I've said, any postulation about the OTHER universe is purely blind faith because we cannot reason it out nor can we prove it. It doesn't mean it's wrong, it just means it's both unscientific since science can't prove it. So we can ONLY postulates it as a possibility and then we have to admit that there's no way to prove it. There's no rational basis for this multi-verse. The multi-verse could be a pink unicorn and you would not be able to prove it or disprove it. Furthermore you can't prove that the other universe has time in it. Nor can you prove that any other dimensions existed before the big bang. Here's the other problem. You'd also have to prove that any dimension of time that is outside of time had to be part of another yet INFINITE universe. Let me explain.

If our universe is part of some sort of cojoined multi-verse, but that multi-verse had a COMMON time factor that it shared with all multi-verses as this objection postulated, then that Multi-verse would itself have to be infinitely old or compose of additional multiple universes without a common time dimension. Why? Because if not then THAT multi-verse would need a non mechanistic first cause. The only way this would work is if we are part of a multi-verse with infinite other unrelated universes. Does that make sense? It's a strong restriction, but it exists logically. But what have we done, we've created a made to order universe that we can't prove exists. Why not create the flying spaghetti monster of Dawkins?

So frankly, I hope you understand my not buying it. It's just a lot of blind faith that you have on this postulation that cannot be proven. I'm sorry but you have to understand how any THINKING person would be skeptical of a theory that has NO evidence for it whatsoever and gets subsequently more complicated the more you look into it. It's a nice theory. But it's as valid as the multi-unicorn or the multi-flying-spaghetti-monster theory. However in contrast the concept of a extra-dimensional freewill first cause is quite rational and quite logical and fits within everything we know about intelligence and the universe that we CAN measure. In fact the Intelligent Agent X theory FITS with everything we DO know about our universe. Now I'd admit that if that was the ONLY think we had to prove the Intelligent Agent then perhaps one could argue that your mutli-versal sphagetti monster was as plausible as my Agent X. BUT as I said that's only one of at least 6 pieces of evidence. When taken together the weight of rationality and plausibility is on the side of a freewilled Agent X.

Objection: In physics, M-theory is a proposal that unifies the five ten-dimensional superstring theories as limits of a single 11-dimensional theory. Though a full description of the theory is not yet known, the low-energy dynamics are known to be supergravity interacting with 2- and 5-dimensional membranes. ....

Response:
I don't mean this as a put down but I find it interesting when people grasp at a theory they don't understand to bail them out of a theory they DO understand. It's one thing to be able to conclusively prove a scientific theory but surely you see my skepticism when you say: Well, I don't understand M-theory but I bet it will solve the problem of needing a freewill non-mechanistic agent. It actually doesn't and it's the same accusation of the God of the Gaps that is laid at the feet of theists. We can't understand something so we say God did it. But in this case you can't solve something and you say: The Multi-verse did it. Ah but you say: "It's what you theists doing. You are saying that you can't explain the cause of the universe so you say God did it." But that's not true. We DERIVED the 5 characteristics of Agent X logically. We didn't force fit the data.
As for M-Theory, it really does not help the situation. It merely postulates another dimension to tie the 10 known ones together.

Objection: But you are proposing the supernatural as a solution. That's not scientific.

Response:
I love this objection. I wish I had been asked this before Casey, Cornelius and Brian and I had debated Eugenie Scott and Eric Rothschild at the Commonwealth Club, because then I would have thought about it earlier and would have been able to give them a different answer. Here's what my answer would be today.
OK Let me get this straight.

1. You claim that the universe came from nothing. You certainly can't call that natural. Is it scientific to assume that things come from nothing all the time? If I walked up to you and said: I created this clump of clay from nothing, would you believe me or think I'd lost my marbles? Would you think I was a scientist? So when you postulate that the universe came from nothing, you are immediately postulating an unnatural unusual event. But you say it happened and you are forced to claim that it happened outside our 4 dimensions. In which case we know that it must be a super-natural event.

2. You say that life came from no life. You certainly can't call that natural either. Is it scientific to assume that the law of biogenesis is being violated on a daily basis. If I walked up to you and said, I created a living creature from this clump of clay, would believe me or think I've lost my marbles again? So when you say life came from non-life violating what we know is a scientific law, you are postulating an unnatural unusual event.

So what can we conclude? At least 2 unnatural, unusual events have happened in the history of the world and at least one of them was a supernatural event. Well if 2 can happen, why not 3? Why not 5? The atheist has no ground to object at this point. None. This works both ways. If you can plead a supernatural cause to the universe and claim it is scientific then we can too. Why does the introduction of intelligence and freewill suddenly cause something supernatural and unusual to stop being scientific?

And then if both the big bang and abiogenesis is accepted as scientific, what audacity must you have to then say that ANY supernatural, unnatural or unusual event is not scientific? That I think is the real question and the burden of proof is upon you not us.

Furthermore I have shown that it is indeed reasonable to believe that multidimensional space exists. And in this multidimensional space multidimensional creatures could exist who could intersect our 3D space. So not only do we have a rational basis for an extra-dimensional being but also multidimensional beings.

Question: How can you say that God needs no cause? Despite your previous explanations, I refuse to agree that: Everything that has existed forever needs no cause or that anything that begins to exist needs a cause.

Response:
Let's start with the first part: Everything that has existed forever needs no cause.

You may really claim that you believe that this is false, but for centuries scientists never had a problem with something that always existed needing no cause, why do you suddenly want to change this conviction just because it doesn't help your cause? Are you saying they were wrong? In which case, have you found any NEW philosophical or scientific information that would change this philosophy? Or are you saying, now that you know the universe is not eternal, you don't like the fact that anything ELSE besides the universe could exist without a cause.

This should make you suspicious about any of your own claims about really wanting to know the truth. Could it be that you've put yourself in a box and you'll only accept that which you **want** to be true, not that which is actually more reasonably true.

Secondly, if something existed forever, that means it had no beginning. If it had no beginning then it could not have had a cause. This is both logical and rational. If you postulate that something had a cause, you are postulating a beginning. If you postulate a beginning then it's simply logical to realize that it did not exist forever. After all that is the definition of having a beginning.

Of course you may arrogantly say: Well those older atheists were stupid or ignorant to think the universe existed forever. I'm a more enlightened atheist. But without new scientific or philosophical data your stance is really unsupportable and in the face of the plain logic, you are trying to contradict it (the logic). It would seem that you are operating on feelings or blind faith at this point. Note those old atheists only found 1 new piece of relevant info. That the universe had a beginning. This is not a reason to abandon the concept that something could exist forever. Knowledge of the universe having a beginning is not a logical proof that anything that existed forever needs no cause. They are unrelated in the realm of reasoning.

Ah but you say "Now that we know the universe didn't exist forever we know that there's nothing that can exist forever. So you

must show me something that exists forever for me to accept that such a thing could exist."

But if you say that, this is going too far. I don't need to show you that nothing can exist forever, I just need to logically and rationally reason it out. Just like I don't need to physically show you that 1 Trillion dollars stacked on top of each other is 67,000 miles for you to understand it. I can reason it out. And if it was reasonable for a universe to exist forever, it's reasonable for something else to also exist forever.

But let's say that your claim is now: Well nothing can exist forever.
So let's look at the consequences of claiming that nothing can exist forever.

It immediately means you have a problem with most other atheists. If nothing can exist forever, what gave rise to the universe? Even atheists post the big bang discovery (i.e. the enlightened ones) have posited that hyperspace or some eternal "thing" caused the big bang. (Quentin Smith suggested this, obviously not realizing that the Big Bang indicates that there were no dimensions prior to the singularity and hyperspace is multidimensional which means it needs dimensions), but even Quentin postulates that this hyperspace could have existed forever. He for one apparently has no problems even with things existing forever. I'm not saying that you must accept Smith's reasoning. But I must ask, what good reason do you have to not accept that? How do you refute him?

Am I appealing to atheistic authority too much? OK let's think logically about this then. What is the basis for thinking that nothing can exist forever? If time does not exist, then even the word forever must mean something different than what you are thinking it means. (As the famous line goes; You keep using that word, I don't think it means what you think it means). If time began to exist at some point then something must have existed causally before it to cause it, (note I said cause-ally before it, not temporally before it, not casually or temporarily). Simple deduction says that whatever existed causally before the singularity must exist outside of time and space. Or to put it more simply whatever caused time and space to exist, must not be constrained by time and space.

Ah but you say: Maybe the universe popped out of nowhere. But this is not a scientific or philosophically acceptable premise. Note again something existing forever IS a scientific and philosophically acceptable premise at least it was considered scientific 50 years ago and as I've said, you've not found any new information about existence in that time - and no quantum theory does NOT allow something to come from nothing (go back and reach your physics textbooks). So why do you wish to propose an unscientific premise?

Scientifically we know that every single time we see something happen it must have a cause. You can repeat this experiment every single time in triple blind tests and you'll come to the same scientific conclusion. Nothing can come from nothing. Everything that begins to exist must have a cause.

And to simplify it even further, imagine if you were walking around one day and you hear a bang and ask: What caused that bang? I say nothing. You'd say: Don't be stupid man! Bangs don't just happen for no reason. You are being superstitious.

Well if that's true of little bangs, how much less true should it be of big bangs? Is there something scientific in the nature of the size of the bang that makes its causality unneeded? There isn't. And so that's not logical or scientific. As for an uncaused bang, that's not scientific that's plain superstition. And now we are turning the tables on you. Why do you keep insisting on an irrational solution as an alternative to a rational and logical solution that I've proposed? Is it that you WISH there to be no cause? Well if wishing were unicorns….

But what if NOTHING caused the big bang. We may as well look at that, because it turns out that that doesn't solve your problem either. Because if nothing caused the big bang you are back in trouble with the mechanistic agent. If nothing caused the big bang, the either the Universe should be infinitely old or there should be infinite number of them. One is not true and the other can only be believed with blind faith. Though this sounds confusing "nothing" is also mechanistic. It doesn't help you to appeal to nothing as the cause of the big bang.

So here's the rub:
1. There is no scientific evidence that can show any thing that begins to exist needs no cause. There is also no philosophic or logical premise to hold this belief. So we can conclude it is unscientific and superstitious to blindly believe so contrary to everything we have measured or observed or calculated or reasoned.
2. There is no philosophic or logical refutation for something eternally existing. And as I've pointed out, until 50 years ago, no atheistic scientist seemed to have a problem with the concept. There's no argument ever advanced that says nothing can exist forever, and I've never seen such an argument. (Feel free to provide it if it exists). Many things exist eternally uncaused. For example Logic exists eternally, 1+1 = 2 has always been true eternally. It never began to be true. 1+1 =2 has no cause (no of course it's not God because it's obviously mechanistic). Infinite series of numbers exist,

So we are left with the original premise accepted by a majority of scientists, be they atheists or theists i.e. Anything that existed

forever needs no cause, anything that begins to exist needs a cause. To make a claim that this is wrong is easy, (anyone can make any claim as you well know), but I'm challenging you to prove it's wrong against all the logic and scientific evidence we currently have. And note, nothing else in this paper defies either science or logic. I use them to defend my argument. You maybe trying to avoid them. It's interesting to see the tables being turned.

For a more comprehensive argument, I've add William Lane Craig's Kalam Argument:

1. Whatever begins to exist has a cause of its existence. (This is simple science)

2.The universe began to exist. (Proven in the 50's and is not Infinitely old i.e. refuted collapsing/expanding theories)

2.1 Argument based on the impossibility of an actual infinite:
2.11 An actual infinite cannot exist.
2.12 An infinite temporal regress of events is an actual infinite.
2.13 Therefore, an infinite temporal regress of events cannot exist.
2.2 Argument based on the impossibility of the formation of an actual infinite by successive addition:
2.21 A collection formed by successive addition cannot be actually infinite.
2.22 The temporal series of past events is a collection formed by successive addition.
2.23 Therefore, the temporal series of past events cannot be actually infinite.
2.3 Confirmation based on the expansion of the universe.
2.4 Confirmation based on the thermodynamic properties of the universe.

3. Therefore, the universe has a cause of its existence.

4. If the universe has a cause of its existence, then an uncaused, personal Creator of the universe exists, sans creation

4.1 Argument that the cause of the universe is a personal Creator:
4.11 The universe was brought into being either by a mechanically operating set of necessary and sufficient conditions or by a personal, free agent (i.e. Non-Mechanistic).
4.12 The universe could not have been brought into being by a mechanically operating set of necessary and sufficient conditions.
4.13 Therefore, the universe was brought into being by a personal, free agent.
4.21 The Creator is uncaused.
4.211 An infinite temporal regress of causes cannot exist. (2.13, 2.23)

5. Therefore, an uncaused, personal Creator of the universe exists, sans creation.

For more information on the Kalam Argument please see Craig's website: www.WilliamLaneCraig.com.

Objection: You are asking me to prove God does not exist. You can't prove a negative.

Response:
Actually, I'm not asking you to prove God does not exist. I'm asking you to show me a better explanation of all the data I've shown you. You may say: Multiverses. But Multiverses is the "god of the gaps", it doesn't prove anything and is un-provable. Remember anything you've said about God I can say about multiverses.

I've provided a rational reasonable response based on scientific data. You've offered an unprovable speculation. Here's an analogy. We're trying to detect who the secret spy is, I've determined 6 characteristics of him, some that no one else could ever match. I say: Agent X is Robert from Accounting. And yet you are complaining - oh you are trying to make me prove a negative. No. I'm trying to say that Robert is the man and unless you can prove my logic is wrong or my facts are wrong you cannot disprove my argument.

If this is your objection, then I think it's a false objection, to refute my argument, you have to either show
A. My facts are wrong or
B. My logic is wrong.
There is simply no other way.

Christian Objections:
Objection: The Big Bang is unbiblical.

Response:
Actually it isn't. The Big Bang as I've shown is one of the greatest attestations to the authenticity of Genesis.

The Big Bang is not a good name. "The Big Controlled Explosion" would be more accurate.
Remember the Big Bang is not equal to Evolution! The Bible says the Big Bang happened, the Bible does NOT say evolution happened. They are two separate issues.

There are valid interpretations of Genesis that show that the word Yom in the Gen 1 can be interpreted as an age.

Objection: Are we changing our interpretation of the Bible to fit science?

Response:
Not really - actually science is changing to fit us
You see, Irenaeus in the 1st Century,
Origen in the 3rd.
Basil in the 4th and
Aquinas in the 13th Century and others all said the word YOM should be interpreted as EON not DAY.
And you can't claim they were interpreting the Bible to fit science, since science didn't know about the Big Bang Theory or the age of the earth till the 20th Century.
It looks like science finally came around to agreeing with us not vice versa.
The Bible easily supports the concept that the earth is around 4.5B years old and the universe is 13.7B years old.

References:
Some great websites for more info like this:
1. William Lane Craig's Website: http://www.WilliamLaneCraig.com
Craig is an expert at winning public debates with Atheists. See especially the Kallam Cosmological Argument
2. Stand to Reason: http://www.str.org
Greg Koukl's website. Greg is a master at tactics for defending the faith and rational thought.
3. "**The Privileged Planet"** By Richards and Gonzales.
4. Reasons to Believe website, www.reasons.org
5. **Frank Turek's** website crossexamined.org

A good source by Dr. Rodney Whitefield a Hebrew Scholar interpreting the DAY/AGE issue in Genesis can be found at **www.CreationInGenesis.com**

Neil Mammen can be scheduled to speak for Churches, Classes, Seminars, Groups, Schools and Youth Events. Please contact him at speaking@NoBlindFaith.com
*A much fuller version of this content that is easy to hand out to friends can be purchased on line at: **http://www.amazon.com/Who-Agent-Proving-Science-Rational/dp/1448626196***

Appendix

Some of the other Fine Tuning Parameters for the Universe

1. **strong nuclear force constant** *if larger*: no hydrogen would form; atomic nuclei for most life-essential elements would be unstable; thus, no life chemistry *if smaller*: no elements heavier than hydrogen would form: again, no life chemistry
2. **weak nuclear force constant** *if larger*: too much hydrogen would convert to helium in big bang; hence, stars would convert too much matter into heavy elements making life chemistry impossible *if smaller*: too little helium would be produced from big bang; hence, stars would convert too little matter into heavy elements making life chemistry impossible
3. **gravitational force constant** *if larger*: stars would be too hot and would burn too rapidly and too unevenly for life chemistry *if smaller*: stars would be too cool to ignite nuclear fusion; thus, many of the elements needed for life chemistry would never form
4. **electromagnetic force constant** *if greater*: chemical bonding would be disrupted; elements more massive than boron would be unstable to fission *if lesser*: chemical bonding would be insufficient for life chemistry
5. **ratio of electromagnetic force constant to gravitational force constant** *if larger*: all stars would be at least 40% more massive than the sun; hence, stellar burning would be too brief and too uneven for life support *if smaller*: all stars would be at

least 20% less massive than the sun, thus incapable of producing heavy elements

6. **ratio of electron to proton mass** *if larger or smaller*: chemical bonding would be insufficient for life chemistry
7. **ratio of number of protons to number of electrons** *if larger*: electromagnetism would dominate gravity, preventing galaxy, star, and planet formation *if smaller*: same as above
8. **expansion rate of the universe** *if larger*: no galaxies would form *if smaller*: universe would collapse, even before stars formed
9. **entropy level of the universe** *if larger*: stars would not form within proto-galaxies *if smaller*: no proto-galaxies would form
10. **mass density of the universe** *if larger*: overabundance of deuterium from big bang would cause stars to burn rapidly, too rapidly for life to form *if smaller*: insufficient helium from big bang would result in a shortage of heavy elements
11. **velocity of light** *if faster*: stars would be too luminous for life support *if slower*: stars would be insufficiently luminous for life support
12. **age of the universe** *if older*: no solar-type stars in a stable burning phase would exist in the right (for life) part of the galaxy *if younger*: solar-type stars in a stable burning phase would not yet have formed
13. **initial uniformity of radiation** *if more uniform*: stars, star clusters, and galaxies would not have formed *if less uniform*: universe by now would be mostly black holes and empty space
14. **average distance between galaxies** *if larger*: star formation late enough in the history of the universe would be hampered by lack of material *if smaller*: gravitational tug-of-wars would destabilize the sun's orbit
15. **density of galaxy cluster** *if denser*: galaxy collisions and mergers would disrupt the sun's orbit *if less dense*: star formation late enough in the history of the universe would be hampered by lack of material
16. **average distance between** stars *if larger*: heavy element density would be too sparse for rocky planets to form *if smaller*: planetary orbits would be too unstable for life
17. **fine structure constant** (describing the fine-structure splitting of spectral lines) *if larger*: all stars would be at least 30% less massive than the sun *if larger* than 0.06: matter would be unstable in large magnetic fields *if smaller*: all stars would be at least 80% more massive than the sun
18. **decay rate of protons** *if greater*: life would be exterminated by the release of radiation *if smaller*: universe would contain insufficient matter for life
19. **^{12}C to ^{16}O nuclear energy level ratio** *if larger*: universe would contain insufficient oxygen for life *if smaller*: universe would contain insufficient carbon for life
20. **ground state energy level for ^{4}He** *if larger*: universe would contain insufficient carbon and oxygen for life *if smaller*: same as above
21. **decay rate of ^{8}Be** *if slower*: heavy element fusion would generate catastrophic explosions in all the stars *if faster*: no element heavier than beryllium would form; thus, no life chemistry
22. **ratio of neutron mass to proton** mass *if higher*: neutron decay would yield too few neutrons for the formation of many life-essential elements *if lower*: neutron decay would produce so many neutrons as to collapse all stars into neutron stars or black holes
23. **initial excess of nucleons over anti-nucleons** *if greater*: radiation would prohibit planet formation *if lesser*: matter would be insufficient for galaxy or star formation
24. **polarity of the water molecule** *if greater*: heat of fusion and vaporization would be too high for life *if smaller*: heat of fusion and vaporization would be too low for life; liquid water would not work as a solvent for life chemistry; ice would not float, and a runaway freeze-up would result
25. **supernovae eruptions** *if too close, too frequent, or too late*: radiation would exterminate life on the planet *if too distant, too infrequent, or too soon*: heavy elements would be too sparse for rocky planets to form
26. **white dwarf binaries** *if too few*: insufficient fluorine would exist for life chemistry *if too many*: planetary orbits would be too unstable for life *if formed too soon*: insufficient fluorine production *if formed too late*: fluorine would arrive too late for life chemistry
27. **ratio of exotic matter mass to ordinary matter mass** *if larger*: universe would collapse before solar-type stars could form *if smaller*: no galaxies would form
28. **number of effective dimensions in the early universe** *if larger*: quantum mechanics, gravity, and relativity could not coexist; thus, life would be impossible *if smaller*: same result
29. **number of effective dimensions in the present universe** *if smaller*: electron, planet, and star orbits would become unstable *if larger*: same result
30. **mass of the neutrino** *if smaller*: galaxy clusters, galaxies, and stars would not form *if larger*: galaxy clusters and galaxies would be too dense
31. **big bang ripples** *if smaller*: galaxies would not form; universe would expand too rapidly *if larger*: galaxies/galaxy clusters would be too dense for life; black holes would dominate; universe would collapse before life-site could form
32. **size of the relativistic dilation factor** *if smaller*: certain life-essential chemical reactions will not function properly *if larger*: same result
33. **uncertainty magnitude in the Heisenberg uncertainty principle** *if smaller*: oxygen transport to body cells would be too small and certain life-essential elements would be unstable *if larger*: oxygen transport to body cells would be too great and

certain life-essential elements would be unstable