

The Universe and the Existence of God

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I could prove God statistically. George Gallup, founder of Gallup polls.

Question with boldness even the existence of God; because, if there be one, he must more approve of the homage of reason than that of blindfolded fear. Thomas Jefferson.

God and Space Science

“Space scientists don’t believe in God, do they?” came the puzzled question. Employed as a scientist working on satellite projects, I frequently was asked how I could harmonize my religious beliefs with my daily work. For, it seemed to such questioners, nobody could believe all that outdated religion claptrap and yet also be a sincere scientist, committed to seeking truth and working logically. It didn’t seem to make sense to them.

“But religion and science don’t mix,” they’d argue. “You can’t believe in God and be a scientist. The ideas are just so contradictory.”

That’s the common belief—that science and religion are at war, that there is no common ground. Science is seen as respectable truth, while religion—well, that’s just absurd stuff. As one person told me, “You have to give up thinking when it comes to religion—but in science, thinking is the most important thing.”

A sad description of the way that our society has denigrated religious thought and worshipped Science. Far too many believe that religion and science are contradictory; that the first is the realm of unreasoned nonsense and the second the domain of logical sense.

During my daily interactions with the project team, though we were building for space, we had our feet very much on the ground. In dealing with questions, the facts were essential. For example, the fact that the metal cadmium “evaporates” in a space vacuum meant you could not use cadmium-plated screws. That made absolute sense to everyone involved on the Spacelab team; and if someone had said “I feel, based on faith, it would be OK to use cadmium-plated screws,” they would have been laughed off the project.

Yet the perception is that such an approach would be acceptable in dealing with God. “Science has made God redundant. You just have feelings that you believe about God, isn’t that right?” one of my co-workers once asked. “Nothing to do with hard facts—you just want to have something to have faith in?” As if there was absolutely no basis for a belief in God apart from emotions and a desire to believe.

I had to explain that, *scientifically*, the God theory made the most sense. That the observable universe was what gave me *cause* to believe. That there was so much *evidence* that convinced me.

God or no God—what does the universe tell us?

According to some strident voices, the universe disproves the existence of God. Atheist Richard Dawkins makes the point bluntly—there is no purpose or design in the universe, and so by logical deduction, there is no God:

“In a universe of electrons and selfish genes, blind physical forces and genetic replication, some people are going to get hurt, other people are going to get lucky, and you won’t find any rhyme or reason in it, nor any justice. The universe that we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil, no good, nothing but pitiless indifference.”¹

His comment: “Why do people believe in God? For most people, the answer is still some version of the ancient Argument from Design.” But, according to Dawkins, “The Argument from Design... has been destroyed as a reason for believing in a God.”²

This is not a new argument. Even the Greek writer Euripides wondered, “Do we, holding that the gods exist, deceive ourselves with insubstantial dreams and lies, while random careless chance and change alone control the world?”

So what is it—God, or random chance, that is in control? And what does the universe demonstrate? Is there scientific evidence for believing in a Designer of the universe?

The truth is that the more we discover about the universe, the more we find it is *exactly* designed for life, and for us to exist. The universe is designed down to the last detail, and even very small changes in the physical laws would make us—and even the existence of matter—impossible.

Get ready for some intriguing stuff, and don’t let the science faze you! The reality of how precisely the universe is constructed is amazing...

“The laws of science, as we know them at present, contain many fundamental numbers, like the size of the electric charge of the electron and the ratio of the masses of the proton and the electron.... The remarkable fact is that the values of these numbers seem to have been very finely adjusted to make possible the development of life.... One can take this either as evidence of a divine purpose in Creation and the choice of the laws of science or as support for the strong anthropic principle.”³

The anthropic principle basically says the universe seems to be precisely arranged so that human beings could exist. The question is, of course, why?

The extremely precise and critical properties that are needed for the universe to *even form in the first place* also point to very careful design and purpose. Writing about the supposed Big Bang, Hawking also explains that if the expansion velocity had been very slightly larger, then the universe would have expanded too rapidly and no galaxies would have formed. Very slightly slower and the universe would have collapsed back upon itself. Hawking estimates that even a

decrease of one part in a *trillion* would have resulted in the universe's re-collapse long ago, while a similar increase would have prevented galaxies forming.

One part in a trillion. Very small odds. Then add in some other aspects, that if they occurred randomly, would be extremely improbable. For example (and don't worry if you don't get all the details, there's no test at the end!—but just look at the evidence):

- If the proton-neutron mass difference is not exactly as it is, then there would only be protons or neutrons. There would be no chemistry at all—and no life!
- If the nuclear weak force (one of the forces that holds matter together) had been very slightly weaker then all the hydrogen in the universe would now be helium. Not great for life either!
- If the nuclear strong force had been 2 percent greater, then protons (at the center of atoms) could not have formed. If the same force had been 5 percent less, we would have a universe with no stars.

There's much, much more, involving the gravitational constant, the quantum of angular momentum, electromagnetic coupling, fine structure constants, and the ^8Be , ^{12}C , and ^{16}O nuclear energy levels—too much to go into here. But the point is made—the universe is fine-tuned to such an amazing extent that created design is the only reasonable conclusion.

To have the right conditions for the universe to even exist, let alone for life, our universe must be balanced on the equivalent of a cosmic knife edge. There are a whole host of physical constants that if changed only in small ways would mean that life would be impossible in the universe. *The universe had to be "exactly so" in order for us to exist at all.*

The Universe—Made to Measure for Life

This shocking realization that so much exact designing is needed for a life-supporting universe to exist has led many scientists to agree that there is something more than random and accidental processes operating in its creation:

"... the Anthropic Principle says that the seemingly arbitrary and unrelated constants in physics have one strange thing in common—these are precisely the values you need if you want to have a universe capable of producing life." Patrick Glynn.⁴

"A life-giving factor lies at the centre of the whole machinery and design of the world." John Wheeler.⁵

"Everything about the universe tends toward humans, toward making life possible and sustaining it." Hugh Ross.⁶

"The universe appears, in fact, to have been incredibly fine-tuned from the moment of its inception for the production of intelligent life on Earth at this point in cosmic history. In the various fields of physics and astrophysics, classical cosmology, quantum mechanics, and biochemistry, various discoveries have repeatedly disclosed that the existence of intelligent

carbon-based life on Earth at this time depends upon a delicate balance of physical and cosmological quantities, such that were any one of these quantities to be slightly altered, the balance would be destroyed and life would not exist.” William Lane Craig.⁷

“As we survey all the evidence, the thought insistently arises that some supernatural agency—or, rather, Agency—must be involved. Is it possible that suddenly, without intending to, we have stumbled upon scientific proof of the existence of a Supreme Being? Was it God who stepped in and so providentially crafted the cosmos for our benefit?” George Greenstein.⁸

These are reputable scientists quoted here. They are among many who have been forced—sometimes very unwillingly—to concede that the universe does look as if it was designed for life.

Even atheist astronomer Fred Hoyle admits that the characteristics of the elements carbon and hydrogen (on which our bodies are based) suggest that they have been deliberately “fixed” that way, and as a result:

“A commonsense interpretation of the facts suggests that a superintellect has monkeyed with physics, as well as chemistry and biology, and that there are no blind forces worth speaking about in nature. The numbers one calculates from the facts seem to me so overwhelming as to put this conclusion almost beyond question.”⁹

The conclusion of Stephen Hawking, when looking at the way the universe is thought to have started, is that “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.”¹⁰

A stunning admission that it is indeed scientific to accept the theory of a Creator God!

And that’s just the physical aspects of the universe.

Life on Earth

What of the conditions needed for life to form—as on our planet? Calculations from what we know of the universe have led to the conclusion that less than a trillionth of a trillionth of a percent of all stars would have a planet similar to Earth. Since the universe only has around one trillion galaxies, each with an average of a hundred billion stars, statistically not even one planet would be found having the conditions necessary for life. So from that analysis, even Earth is unlikely, let alone any other planet on which life could form.

The conclusion is that from what we know of physics and statistics in our universe, is that:

“The bottom line is that the universe is at least ten billion orders of magnitude (a factor of 10^{10,000,000,000} times) too small or too young for life to have assembled itself by natural processes.”

Hugh Ross.¹¹

Take just the core “substance” of life—DNA. This is what makes up the chromosomes that codes and reproduces life, and makes us the way we are.

According to astronomer and writer Fred Hoyle, cited above, "...the odds against DNA assembling by chance are $10^{40}:1$."¹² That's one chance in 10 with 40 zeroes. Very low probability! But some take issue even with this extremely low figure, saying that there are simply too many bonds and connections in DNA for even a single molecule to occur by chance.

Just a quick look at the amazingly intricate structure of DNA gives pause for thought. When you discover that this "double helix" design contains around 100 million twists and 100 *billion* atoms, and realizing that DNA is essential to life itself, it seems quite absurd to even consider the possibility that it could "self-arrange" or come about by accident!

In fact the idea that DNA could have come about accidentally has been called a "non-scientific absurdity."

Even a much simpler protein molecule made up of only 100 amino acids could not have formed statistically in the supposed lifetime of the universe!

Life is amazingly complex. Even the humble bacterium is made up of some 25 million molecules—which need to be produced and organized. The idea that such complexity could form in an accidental way truly is a matter of great credulity for which there is no observed evidence whatsoever.

The argument for God

The argument for God therefore becomes greater as our understanding increases of the incredibly detailed, designed and complex universe in which we live—to say nothing of the amazingly intricate web of life that we find around us, and even inside us.

This is why high-ranking scientists have clearly expressed their belief in God:

"I find it as difficult to understand a scientist who does not acknowledge the presence of a superior rationality behind the existence of the universe as it is to comprehend a theologian who would deny the advances of science. And there is certainly no scientific reason why God cannot retain the same relevance in our modern world that He held before we began probing His creation with telescope, cyclotron, and space vehicles." Werner von Braun, rocket scientist.¹³

"The significance and joy in my science comes in those occasional moments of discovering something new and saying to myself, 'So that's how God did it.' My goal is to understand a little corner of God's plan." Henry Schaefer, quantum chemist at the University of Georgia, five-time nominee for the Nobel Prize.¹⁴

"It seems to me that when confronted with the marvels of life and the universe, one must ask why and not just how. The only possible answers are religious. . . . I find a need for God in the universe and in my own life." Arthur Schawlow, professor of physics at Stanford University, 1981 Nobel laureate in physics.¹⁵

“I believe that there is a God and that God brings structure to the universe on all levels from elementary particles to living beings to superclusters of galaxies.” Mathematics professor John E. Fornaess, of Princeton University.¹⁶

Other famous scientists who clearly identified their belief in God and its compatibility with scientific thought include Isaac Newton, Michael Faraday, Johannes Kepler, Blaise Pascal, Robert Boyle, Nicolaus Steno, Carolus Linnaeus, Lord Kelvin, James Clerk Maxwell, and Louis Pasteur.

Conclusion: It makes sense to believe in God. In the words of William Thompson, Lord Kelvin, one of the world’s greatest scientists:

*If you think strongly enough, you will be forced by science to the belief in God.*¹⁷

Bible

The Bible has no question that the universe speaks of God’s existence, long before anyone knew about quarks or mesons, quasars or black holes:

“The heavens declare the glory of God; the skies proclaim the work of his hands.... By the word of the LORD were the heavens made, their starry host by the breath of his mouth.”¹⁸

In fact, the Bible says that we are without excuse if we refuse to acknowledge such evidence:

“For all that may be known about God by men lies plain before their eyes; indeed God himself has disclosed it to them.” Why? Because “[God’s] invisible attributes...have been visible, ever since the world began, to the eye of reason.”¹⁹

In other words, our minds should be able to establish the truth about God from what God himself has revealed to us about himself. It makes no sense if there is no God. That’s why the Bible says “The fool says in his heart, ‘There is no God.’”²⁰ You truly have to be foolish to say there is no God, if you consider the evidence of the universe with an open mind.

The universe continues to speak of its Creator, from the tiniest sub-atomic particle to the greatest galaxy. Does God exist? Every atom, every law of physics, every chemical element—the whole of the observed universe says *Yes!*

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