

everything (bad for life forms) or contracted into a black hole compressing everything into a very, very tiny mass,  $10^{-33}$  centimeters (equally bad for life forms). Is this another “anthropic coincidence?”

If the Strong Nuclear Force coupling constant had been 2% higher at the Big Bang, there would be no hydrogen in our universe (no nuclear fuel for stars, no water, etc. – quite bad for life forms). Conversely, if the SNF coupling constant had been 2% lower at the Big Bang, there would be no element heavier than hydrogen (no carbon – disastrous for life.)

Finally, if the Gravitational Force, the Mass of the Proton, the Mass of the Electron, or the Electromagnetic Charge had varied ever so slightly (higher or lower) from their values at the Big Bang, then the entire universe would have been populated by blue giant stars or red dwarf stars. Blue giants incinerate everything and red dwarfs do not give off enough heat to get anything in the universe beyond freezing. Potential life forms would have either burned up or frozen. Yes, more “anthropic coincidences”.



What are we saying? At the Big Bang, the very smallest of shifts – higher or lower – in the values cited above would have made the emergence of any life forms impossible! And not just the above constants, but a lot of the others as well! What were the odds of hitting the anthropic values (the values needed for life forms) of all our universe’s constants so precisely at the Big Bang when the possibilities either higher or lower were virtually endless? They were roughly equivalent to the odds of a single monkey typing the entire corpus of English literature by the random tapping of keys in a single try. Or someone winning the lottery a trillion times in a row. It is enough to make non-believers believe. The famous physicist and cosmologist Sir Fred Hoyle, of Cambridge University, was an atheist who, when confronted with the necessity of these “anthropic coincidences” working in concert with one another to produce carbon at the Big Bang, stated, “Would you not say to yourself, ‘Some super-calculating intellect must have designed the properties of the carbon atom, otherwise ]the chance of my finding such an atom through the blind forces of nature would be utterly miniscule?’ Of course you would... A common sense interpretation of the facts suggests that a super intellect

has monkeyed with physics, as well as with chemistry and biology, and that there are no blind forces worth speaking about in nature. The numbers one calculates from the facts seem to me so overwhelming as to put this conclusion almost beyond question.” (Fred Hoyle 1981. “The Universe: Past and Present Reflections.” Engineering and Science. Pasadena, CA: California Institute of Technology Press, November, pp. 8-12.)

Later on, he compared the odds of the universe having abundant carbon (a necessary building block for life) to a tornado blowing through a junkyard and leaving in its wake a fully assembled jumbo jet all ready for flight. Needless to say, Hoyle changed his mind about atheism, and now believes in an intelligent Creator.

The evidence of a Creator is all around us. We’ve examined astrophysics alone. More evidence can be found through philosophy, medicine, and biology.



Father Robert J. Spitzer, S.J., Ph.D., (philosopher of science, author of 10 books, and Magis Center founder) has stated, “If the values of the constants did not occur by pure chance (because that is virtually impossible) and those values are necessary for life forms, then there must be another cause – either a multiverse or a supernatural designer.” He explains that multiverses (for which we have no observable evidence) also need a Creator. They require a beginning and even more fine tuning.

As Fr. Spitzer asks, “Is it reasonable and responsible to believe in a Creator if there is no other natural explanation for the constants of our universe being what they are?”

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# Existence of God

## Evidence from Astrophysics



### In The Beginning... Evidence for the “Big Bang”

Originally, Albert Einstein believed, like most scientists of his day, that the universe was infinite into the past, without a beginning. What changed his mind?

Today, some people believe God created everything as recently as 6,000 years ago. Others think that blind chance explains why our universe is capable of supporting life. What are they missing?

The answer in both cases is recent scientific discoveries. Specifically, evidence of a beginning. And evidence that strongly supports creation by an intelligent being or, at a minimum, shows it to be nearly impossible for the universe to be an accident.

Let’s start with Einstein. To make his General Theory of Relativity (GTR) work, he had to add a “fudge-factor” called the cosmological constant. This allowed the GTR to account for our universe being eternally static into the past. Then he met Fr. Georges Lemaître.

In 1927, Fr. Lemaître had put forth his theory that the universe was not static but was, in fact, expanding. While Einstein appreciated the elegant math involved, he didn’t accept the idea of an expanding universe because of the far-reaching implications. Einstein recognized that an expanding universe would require a beginning.



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