

# The Universe is Specifically Designed to Support Life

By Joseph F. Marino

Advances in science within the past several decades have shown that the precise values of the fundamental constants in physics and their relationships indicate that the universe was designed by supernatural intelligence to produce life, and that the earth and human life does indeed have a privileged place in the universe. Consequently, some scientists have come up with other theories to discount an intelligent creator, but they fail the “Ockham’s razor” principle, which calls for the simplest of competing theories to be the most preferable.

Since the time of the Copernican principle and the Darwinian theory of evolution, scientific exploration has taken on a more mechanistic, impersonal, and random view of the cosmos and the development of life.<sup>1</sup> The Copernican principle of the sixteenth century states that the earth was not in a central or specially favored position in the universe and that man did not hold a special place as observers of the universe.<sup>2</sup> Darwin’s theory of evolution stated that life evolved from simple to complex forms in a non-directed and purely random process of natural selection. Atheistic scientist Bertrand Russell stated that, “Darwin, moreover, had demonstrated that the origins of life and even of the human species could be explained by blind mechanisms.”<sup>3</sup> It seemed that science had removed God from the equation of creation. In the eyes of science, God was dead and man was just an unfortunate accident in the material universe.

The advances in science in the twentieth century, however, began to change all that. In the 1920’s, Belgian physicist Fr. Georges Lemaitre proposed that a single primeval atom could have brought about the beginning of the universe. Using Einstein’s theory of gravity, which implies that the universe is expanding and not static, he combined this idea with the fact that galaxies were observed to be receding to come up with the Big Bang theory.<sup>4</sup>

Previously, scientists did not have a sense of how the universe began or if it had a beginning at all. Indeed, ancients believed that the universe was eternal, that it always was. Lemaitre’s proposal was met with skepticism from the scientific community. But, the idea of an initial explosion, a “big bang” by which our universe came into existence gained credibility, especially in 1927 when Edwin Hubble discovered that other galaxies in our

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<sup>1</sup> Patrick Glynn, *God the Evidence*, p. 23.

<sup>2</sup> [http://en.wikipedia.org/wiki/Copernican\\_principle](http://en.wikipedia.org/wiki/Copernican_principle) (accessed August 1, 2012).

<sup>3</sup> Patrick Glynn, *God the Evidence*, p. 23.

<sup>4</sup> Robert Spitzer, *New Proofs for the Existence of God*, p. 16.

universe were rapidly rushing away from ours.<sup>5</sup> This discovery gave evidence of an expanding universe. And, since the universe is expanding then one could extrapolate back and deduce that all matter, energy, space and time in the observable universe were together at one point in the finite past, one singularity.<sup>6</sup>

In 1964, two scientists, Arno Penzias and Robert W. Wilson, while working on a communication satellite in Bell Laboratories, were annoyed by a constant low level noise coming from every direction in the sky. These two physicists realized that the “noise” was the echo of the “big bang” billions of years before. The “big bang” theory of the universe having a beginning point gained increased credibility.<sup>7</sup>

In the 1970’s, with the big bang theory firmly established, scientists began to think about possible alternative scenarios for the evolution of the universe. They tinkered with certain known values of the fundamental constants in the universe, like gravity, to see what effect there would be if it was altered ever so slightly. Or, what effect would it have on life if the electromagnetic force constant was altered? They discovered that the slightest change in the value of the gravitational or electromagnetic force constants derailed the whole process of life’s development and humans would not exist. Any tinkering with the gravitational constant in relation to the electromagnetic force constant would have resulted in no middling stars like our sun, but only hotter “blue” stars or cooler “red” stars, both incapable of sustaining life.<sup>8</sup>

There are about twenty physical constants whose values science cannot predict or explain why they have the precise values they do. Besides gravity and electromagnetism, there is the speed of light and the strength of the weak and strong nuclear forces.<sup>9</sup> A weakening of the strong nuclear force would have resulted in a universe consisting entirely of hydrogen and a universe without atoms, stars; or worse, a universe that would collapse back upon itself in the first moments of expansion.

The size of the sun in relation to its distance from the earth makes our planet the only one in our solar system’s habitable zone. The development of intelligent life requires that planetary temperatures be just right. The habitable zone in our solar system is very tiny.<sup>10</sup> And, if the axis of the earth were any less than the existing 23 degrees, the earth would not rotate meaning only half the planet would be constantly exposed to the sun and the other half would be constantly frozen, making the development of life problematic.

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<sup>5</sup> Patrick Glynn, *God the Evidence*, p. 27.

<sup>6</sup> Robert Spitzer, *New Proofs for the Existence of God*, p. 16.

<sup>7</sup> Patrick Glynn, *God the Evidence*, p. 27.

<sup>8</sup> Ibid.

<sup>9</sup> Francis Collins, *The Language of God*, p. 74.

<sup>10</sup> Stephen Hawking, *The Grand Design*, p. 152.

A change in any one constant would affect the other constants. The fine tuning of all these precise values are exactly what is needed to bring about a stable universe that can sustain complex life forms. This conclusion has come to be called the “fine tuning” of the universe or the Anthropic Principle, which states: The universe was designed to give rise to human life.

This realization changed the view of how people interpreted the Copernican principle. Humankind may not be in the physical center of the universe, but we are in one that is certainly privileged and seems to be designed for our existence.

The evidence of the Big Bang and all the finely tuned physical laws of nature, which hold the universe together to maintain its existence and support life, can lead us through reason to conclude that there is an intelligent designer (God). It reveals a God who not only created humans in his image and likeness, but also created a universe capable of supporting intelligent life. There seems to be a harmonious communion between these physical laws of nature and that man through reason also is also called to live in a harmonious communion, just as in the communion of the one Triune God of the Christian faith. The communion of God the Father, Son and Holy Spirit, His inner nature, can be seen throughout the communion of all creation for the praise and glory of God.<sup>11</sup>

However, not all scientists can consign themselves to the thought of the universe having a definite beginning and accept the implications of the Anthropic Principle. One scientist, Stephen Hawking, introduced his “no-boundary” theory in an effort to do away with the universe having a beginning point. Hawking moved the beginning point from a linear timeline to one on a sphere, like the North Pole on a globe, where there was no beginning or end. In Hawking’s theory, time-zero ( $t=0$ ) is eliminated.<sup>12</sup>

The universe is made up of four dimensions, three are space and the fourth is time. Hawking states that Einstein’s theory of general relativity cannot be used to describe the origin of the universe. Going back in time the universe was Planck size or a billion-trillion-trillionth of a centimeter at which point quantum theory must be used in combination with general relativity.<sup>13</sup> In the theory of quantum physics, gravity stretches and compresses space and time; it warps space and time. To give an example, if space were like a billiard table and one rolled a ball on the table it would travel in a straight line. But if the table surface was warped, the ball will curve.<sup>14</sup>

People at one time viewed the earth as flat and wondered whether the ocean poured over the edge of the earth. The problem was solved when it was realized that the earth was not flat but had a curved surface. Time was seen in a similar way. It was flat and linear like a

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<sup>11</sup> *Catechism of the Catholic Church*, #337.

<sup>12</sup> Patrick Glynn, *God the Evidence*, p. 42.

<sup>13</sup> Stephen Hawking, *The Grand Design*, p. 130.

<sup>14</sup> Stephen Hawking, *The Grand Design*, p. 134.

railroad track and it went back in time to where the train was set in motion by someone (God). Einstein's theory of relativity combined space and time. However, Hawking states that when speaking of the beginning of the universe we have to add the effects of quantum physics in which time behaves like another dimension of space, thus eliminating time. So, when speaking of the beginning of the universe the issue of time is avoided, thereby time as we know it did not exist.<sup>15</sup>

Hawking states, "The realization that time can behave like another direction of space means one can get rid of the problem of time having a beginning, in similar way in which we got rid of the edge of the world."<sup>16</sup> In Hawking's theory, the typical four dimensional space-time becomes a four dimensional space, which makes it difficult to pick out the singular event of a beginning. The universe still began, it is just not as easily identified. An example would be to look at the shape of a cone that has a point at the end. There is not an unlimited distance to the tip, eventually one will come to the end (i.e., the first instance of time). In Hawking's model, the tip has been rounded off by warpage. Instead of coming to a sharp point, it rounds off and comes back around the other side. The end is there, it's just not clearly identified.

Thus, the Big Bang model is not only the beginning of the physical universe, but also the beginning of time. The typical physicist's answer to time is this:

"Time is a feature of the physical universe. It is something physical, just like atoms or light. Time and space form a manifold that, as we noted, can stretch, warp, and vibrate. Since time is just a physical part of our physical universe, it follows that if the physical universe had a beginning then time and space themselves began too."<sup>17</sup>

St. Augustine of Hippo (354-430) noted, which is also the view common to modern cosmologists, that "there could not have been time passing before the beginning, since if time was passing, that meant something had already been created."<sup>18</sup> Time itself is something created, as before time there was nothing and *only nothing can come from nothing*.

Therefore, God must be the primary mover, the first cause of the universe. Nothing can exist that does not owe its existence to God. Time and space have the physical properties they do and owe their existence to God, who drew them out of nothingness.<sup>19</sup> God said let there be light and there was light, the Big Bang from which all things come into being from nothingness.

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<sup>15</sup> Ibid.

<sup>16</sup> Ibid.

<sup>17</sup> Robert Spitzer, *New Proofs for the Existence of God*, p. 18.

<sup>18</sup> Robert Spitzer, *New Proofs for the Existence of God*, p. 19.

<sup>19</sup> *Catechism of the Catholic Church*, #338.

Another scenario that Hawking gives is that of multiple universes caused by quantum fluctuations creating spontaneously out of nothing. A picture of spontaneous quantum creation is that of bubbles caused by steam from boiling water. Each has its own size and they are going off in all directions. Some last only a second and collapse back into nothing. A few will grow large enough to be sustained and not collapse.<sup>20</sup>

The idea behind multiple universes seems intended to lessen the extreme improbability of our anthropic universe by placing it within the context of multiple universes. If there are trillions upon trillions of other universes, then the fact that ours hit upon the right combination of finely tuned laws would not be so special. Humanity once again becomes an accident relegated to chance.<sup>21</sup>

However, these anti-anthropic theories do not hold up to the “Ockham’s razor” principle, which is a rule in science and philosophy that “the most plausible of a possible set of explanation is that which contains the simplest ideas and the least number of assumptions.”<sup>22</sup> The idea of imaginary multiply universes, which cannot be observed or measured, to explain away the Anthropic Principle for one is not a persuasive argument nor does it seem to hold up to Ockham’s razor principle.

Science cannot deductively prove or disprove a creator. Science deals with the physical universe and laws of nature. God is not an object within physical science to be studied or measured; therefore, science cannot say anything about God.

Furthermore, where do these laws of nature that science uses come from? How did they come to exist with such precision that they seem to have one purpose, namely to enable the development of life? The heavens are telling the glory of God, but some seem closed to divine grace and God’s revelation and prefer to look for what is not there: highly speculative universes that pop out of nothing from nothing and removing time from the universe to avoid the idea of a beginning.

Today, science has sound data that strongly points to the God hypothesis as the cause of the universe and the existence of humanity. It is the simplest and most logical explanation. The alternative is to place hope in a speculation of unobservable universes. Absent material proof of an efficient cause to our universe or any multiverse and how our universe became so finely tuned beyond what could be caused by any mindless process, the scientific evidence points toward a transcendent intelligent being as the most likely cause and possibly the only reasonable explanation of why life exists.

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<sup>20</sup> Stephen Hawking, *The Grand Design*, p. 136-137.

<sup>21</sup> Patrick Glynn, *God the Evidence*, p. 44.

<sup>22</sup> Robert Spitzer, *New Proofs for the Existence of God*, p. 69.

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