Supplemental Notes

The Creator
Beyond Time and Space

What are the implications of the current upheavals in traditional cosmology, astronomy, and physics?

What is the significance of the recent discovery that the universe is finite?

As part of their recent series on *The Creator Beyond Time and Space*, Chuck Missler and Dr. Mark Eastman explore current scientific evidences that reveal the Infinite Designer and a finite universe.

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The Creator Beyond Time & Space
Tape 1: The Creation of the Universe

The Fundamental Dilemma

The matter in our universe is either infinitely old, or it appeared out of nothing at a finite point in the past (there is no third option).

The old paradigm was one of an eternal universe (Plato and Aristotle, 4th century B.C.). But there were notable exceptions even long ago: Al Ghazali (1058-1111 A.D.) and Thomas Aquinas (1225-1274 A.D.) both assumed a finite universe in their studies of cosmology.

The new paradigm emerging in modern physics today is one of a finite universe that is expanding and decaying (winding down from its Beginning).

The New Physics

In 1877, Michelson and Morely performed experiments which proved that the speed of light did not vary even if the observers were moving toward or away from the source.

Einstein in 1905 came up with his theory of Special Relativity, in which length, mass, velocity and time are relative to the velocity of the observers. His theory of General Relativity (1915) showed that there is no distinction between time and space—scientists now speak of the “space-time” continuum, which has been confirmed 12 ways to 5 decimal places.

Time is a physical property. Time varies with mass, acceleration, and gravity. [Examples include atomic clocks, 1971 aircraft experiment, hypothetical twin astronauts.]

Time is not linear. God exists outside time, since he is not constrained by mass, acceleration, and gravity. This is what Isaiah means when he says: “For thus saith the high and lofty One that inhabiteth eternity...” (Isa 57:15).

Expanding Universe

• 1913: Vesto Slipher showed that galaxies are moving away.
• 1915: Willem de Sitter corrected Einstein's error; space is expanding.
• This proves that the universe is finite and expanding; therefore, it must have had a beginning.

Galactic Motion

• Motion is observed throughout the universe.
• Motion needs to be initiated; objects do not move themselves—this implies a beginning.

Proton Decay

• Each proton consists of at least 3 quarks, which decay irreversibly into antiquarks, pions, positrons, and electromagnetic radiation.
• This proves that matter is not eternal.

Space, Time and Matter

• Hawking, Penrose, and Ellis have proven that space, time, and matter are irrevocably coupled.
• Space, matter, and even time itself had a beginning.
• Just as Mamonides and Nachmonides concluded in the 12th century by examining Genesis 1!
Thermodynamics

• The first law: Conservation of Matter and Energy. It says, “You can’t win.” The Bible says: “And on the seventh day God ended His work...” (Gen 2:2-3); “The works were finished from the foundation of the world...” (Heb 4:3-4); “All the things that are therein...you preserve them all.” (Neh 9:6).

• The second law: The Bondage of Decay. It says, “You can’t break even.” The Bible says: “They shall perish...grow old as a garment...” (Ps 103:25-26); “Heaven and earth will pass away...” (Isa 51:6).

Thermal Decay

• Heat always flows from hot bodies to cold.
• If the universe were infinitely old, the temperature throughout the universe would be uniform.
• It isn’t, therefore it isn’t infinitely old. The universe had a beginning.

The “Big Bang” Models

• The Steady State Model: Einstein’s biggest mistake.
• Hesitation Model: Refuted in the 1960s.
• Oscillation Model: Refuted by entropy laws, lack of mass.
• Inflation Model: Requires antigravity forces never observed.

Measurements of “c”

• 17th century: Johannes Kepler, Rene Descartes, et al., believed light was instantaneous (“c” was infinite).
• 1677: Olaf Roemer measured elapsed time between eclipses of Jupiter with its moons, yielding a finite speed of light.

• 1729: James Bradley confirms.
• Over 300 years, the speed of light has been measured 163 times by 16 different methods.
• 1677: Roemer, Io eclipse: 307,600 m/sec.
• 1875: Harvard, same: 299,921 m/sec.
• It appears that the speed of light is slowing down. Conversely, looking back through time, light traveled vastly faster than today.

The Four Forces

• Gravity: It causes an apple to fall to the ground, keeps our feet on the floor, and binds together our Solar System.
• Electromagnetic: It holds the atom together and determines the structure of the orbits of electrons, so it governs the laws of chemistry; forms include x-rays, radio waves, and light.
• Strong Nuclear Force: It binds together the protons and neutrons in the nucleus of the atom—the balance between the strong force and electromagnetic forces limit a nucleus to about 100 protons. It causes the stars to shine.
• Weak Nuclear Force: It governs atomic instability and radioactivity and can create heat, such as the decay of radioactive elements in the earth’s core or in a nuclear power plant.

The Anthropic Principle

It seems as though somebody has fine-tuned nature’s numbers to make the Universe...the impression of design is overwhelming.
Paul Davies, Cosmologist

As scientists begin to understand the interactions of these basic forces, they discover an unending series of
incredible interdependencies, delicately balanced. Here are a few examples: If the gravity of the earth at its surface were weaker, we would not have an adequate atmosphere; if it were stronger, our atmosphere would contain too much ammonia.

If the electromagnetic coupling constant were either weaker or stronger, molecules for life would cease to exist. As physicists examine the "strong nuclear force coupling constant," it turns out that if it were only slightly weaker, multi-proton nuclei would not hold together and hydrogen would be the only element in the universe. The supply of various life-essential elements heavier than iron would be insufficient.

If they were only slightly stronger, nuclear particles would tend to bond together more frequently and more firmly, and hydrogen would be rare in the universe. Either way, with less than a 1% change, life would be impossible.

If the “weak nuclear force coupling constant” were increased, there would be no helium or heavy elements; if it were decreased, there would be an over-abundance of heavy elements.

**Teleonomic (Purposeful) Design**

As scientists attempt to formulate mathematical models of what is known about our universe, they discover that each of the various factors seem to be in an amazingly delicate and highly interdependent balance. It appears, and is reluctantly admitted by secular scientists, that the universe has been uniquely designed for man.

Some of the many separate factors are shown on the following page:

### Anthropic Factors

**Atomic Physics**
- Strong nuclear force coupling constant
- Weak nuclear force coupling constant
- Electromagnetic coupling constant
- Ratio of electron to proton mass
- Stability of the proton
- Fine structure constants
- Velocity of light
- Be, C, and O nuclear energy levels

**Earth**
- Surface gravity
- Thickness of crust
- Rotation period
- Gravitational interaction with a moon
- Magnetic field
- Axial tilt
- Albedo (reflectivity)
- Oxygen to nitrogen ratio
- Carbon dioxide and water vapor levels
- Ozone level
- Atmospheric electric discharge rate
- Seismic activity

**Sun Factors**
- Birth date
- Age
- Distance from center of galaxy
- Mass
- Color
- Distance to the Earth

**Universe**
- Gravitational coupling constant
- Age of the universe
- Expansion rate of the universe
- Entropy level of the universe
Mass of the universe
Uniformity of the universe
Number of stars
Distance between stars
Rate of luminosity increase

All of this confirms the original cosmological argument: either the universe created itself or it was created by a preexistent “first cause,” a Creator which transcends the constraints of time and space.

**Information Science Speak**

Systems engineering rules out chance as the rival conjecture. Skillful design is conspicuously evident.

- There are only $10^{18}$ seconds in the history of the universe;
- Only $10^6$ atoms in the universe;
- Only $10^8$ particles in the universe;
- Probabilities $<10^5$ defines “absurd.”

**Information vs. Error**

- Signal    Noise
- Order     Chaos
- Direction Random Walk
- Control   Anarchy
- Music     Cacophony
- Design    Chance

**Hierarchy of Design**

- Open Loop Systems (watch)
- Closed Loop Systems (power steering)
- Adaptive System (anti-skid brakes)
- Intelligent Machines
  - language processors
  - self-diagnostic machines
- self-repairing machines
- self-reproducing machines

**Development Realities**

- Complex systems cannot develop themselves gradually through non-functional intermediates.
- Perfect, multiple, simultaneous adaptation of all interacting subsystems is a prerequisite condition for functionality.
- Organization reveals external information input: pre-programmed or coordinated.

**The Abandonment of Truth**

- The Failure of Objectivity in Science
- Values Relativism
- The Reduction of Human Dignity
- The Moral Decay of Society
- The Fallacy of Marxism and Socialism
- Subjugation, Slavery, and Bondage

**Without Excuse**

For the invisible things of him from the creation of the world are clearly seen, being understood by the things that are made, even his eternal power and Godhead; so that we are without excuse...

Romans 1:20

**The Ultimate Challenge**

- “Choose this day whom you will serve…”
- The god called “Chance” or...
- The Transcendent Creator Beyond Time and Space.

* * *
The Mystery of Life’s Origin

Since the time of the early Greeks, the debate has raged regarding the cause of life on earth. Evolutionists (non-theistic) assert that life arose by the fortuitous interplay of time, energy and chance chemistry, acting on non-living matter.

Creation scientists view the origin of life as a purposeful contrivance by an intelligent Creator who applied information or biochemical “know-how” onto matter at the time of creation. These two world views can be expressed mathematically by the following formulae.

Evolution Formula
Matter + Energy + Chance Chemistry = Life

Intelligent Design Formula
Matter + Energy + Information = Life

The Scope of the Problem

The question of life’s origin is much more complex than just explaining the origin of the molecular machinery (“hardware”) found in living cells. Like a computer, living systems also require “software” or coded instructions to direct the activities of the cellular “hardware.”

During the time of Charles Darwin, the structure of the cellular hardware and the system of information storage used by living systems was unknown. However, when the structure of the DNA molecule was deciphered by James Watson and Francis Crick in 1953, a revolution in our understanding of cellular information storage began. Watson and Crick discovered that the DNA molecule is formed by two strands of nucleotides (the chemical letters of the genetic code), which are twisted in the form of a double helix (see figure below).

Deoxyribonucleic Acid

DNA

Nucleotides
A = Adenine
T = Thymidine
C = Cytosine
G = Guanine

The DNA molecule is formed by two chains of nucleotides which are bonded together to form the structure of a spiral double helix—somewhat like a ladder which is twisted from the top down.

The sequence of these chemical “letters” ultimately determines the structure and function of every organ in living systems.

Since 1953, molecular biologists have concluded that the growth and metabolism of all life on earth is carefully controlled by a digital, error-correcting language convention called “the Genetic Code,” which is “carried” by the DNA molecule.
Any theory which attempts to explain the origin of life, in the absence of a Creator, must be able to explain not only the origin of the molecular hardware (DNA, RNA, Proteins, etc.) but the enormously complex, coded information found in all living systems as well.

**Spontaneous Generation**

The evolutionist’s scenario on the origin of life proposes that some four billion years ago, inanimate chemicals developed by chance into highly complex, living, single-celled organisms. It is generally believed to have occurred somewhere in a “primordial ooze,” near deep hot oceanic vents or in a shallow tidal pool. This process has been dubbed “Spontaneous Generation.”

Spontaneous generation was first proposed in the sixth century B.C. by the Greek philosopher, Anaximander. He argued that life arose from mud when it was exposed to sunlight, and that it subsequently evolved into all life forms, including man.

**The Modern Paradigm**

In 1859 Charles Darwin revived Anaximander’s theory and suggested that life had arisen in some “little pond” as a result of sunlight acting on various organic salts.

In the 1920s Russian biochemist I.A. Oparin and English biologist J.B.S. Haldane proposed that life had arisen from simpler molecules on the lifeless earth under much different atmospheric conditions than exist today. They proposed that ultraviolet light, acting on a primitive atmosphere containing water, ammonia and methane, produced oceans with the consistency of a “hot dilute soup” containing the building blocks of life.

In 1952 Harold Urey noted that most of the planets in our solar system, except earth, have an atmosphere which contains little or no free oxygen. Furthermore, Urey knew that the building blocks of life are quickly destroyed if they are exposed to an environment containing oxygen. Therefore, he concluded that spontaneous generation must have occurred on the early earth with an atmosphere consisting mainly of hydrogen, ammonia, methane, and water vapor, but little or no molecular oxygen.

**Stanley Miller’s Bombshell**

In 1953 a graduate student named Stanley Miller set out to verify the Oparin-Haldane-Urey theory. Attempting to simulate the early atmospheric conditions, Miller passed a mixture of boiling water, ammonia, methane and hydrogen through an electrical spark discharge in a system of glass flasks. On his second attempt Miller produced a mixture containing very simple amino acids, the building blocks of proteins. The major product of Miller’s experiment was tar (85%) and carboxylic acids (13%), both of which are toxic to living systems. In addition, small quantities of the amino acids Alanine (0.85%) and Glycine (1.05%) were synthesized. Trace amounts of the essential amino acids Glutamic acid, Aspartic acid, Valine, Leucine, Proline, Serine, and Treonine were also produced.

**Problems with Miller’s Experiment**

Although the scientific establishment embraced Miller’s experiment as proof that life could be produced from simple chemistry, subsequent analysis of the “spark and soup” paradigm has shown it to be unfruitful. The following is a summary of some of the difficulties with this paradigm.
1) The major products of the experiment (tar and carboxylic acids) poison the enzymes in living systems, resulting in death. Secondly, these chemical by-products bond to the building blocks of life (amino acids and nucleotides) far more readily than they bond to each other! Consequently, it becomes an exercise in futility to believe that pure proteins and DNA could arise out of such a chemical quagmire.

2) There is strong evidence that oxygen was abundant on the early earth. This means that the building blocks of life would be rapidly destroyed by oxidation before they ever reached the primordial soup.

3) Atmospheric scientists have recently concluded that the methane, ammonia and hydrogen atmosphere would have been destroyed in a few thousand years by ultraviolet radiation and by escaping earth’s atmosphere. This is a woefully inadequate time to allow for spontaneous generation.

4) Water, the major component of the theoretical primordial soup, causes DNA, RNA and proteins to break down into their individual building blocks.3

5) Despite popular opinion, no one has ever produced nucleotides, the building blocks of DNA.4

6) One of the most devastating problems with the primordial soup scenario is the problem of chirality. The building blocks of DNA and proteins are molecules which can exist in both right and left-handed, mirror-image forms (see figure on next page).

This “handedness” is called “chirality.” The problem for evolutionists is that all “spark and soup-like” experiments produce a mixture of 50% left (levo) and 50% right-handed (dextro) building blocks. However, in all living systems DNA and RNA are comprised exclusively of right-handed nucleotides, while the amino acids in virtually all proteins in living systems, with very rare exceptions, occur only in the left-handed form.

Consequently, not only is the “Primordial Soup” toxic to living systems, it is totally incapable of producing pure “left-handed” proteins and pure “right-handed” DNA.

**The Odds**

In the last 30 years, a number of prominent scientists have attempted to calculate the odds that a free-living, single-celled organism, such as a bacterium, might result by the chance combining of preexistent building blocks. Harold Morowitz calculated the odds as one chance in $10^{20,000,000}$. Sir Fred Hoyle calculated the odds of only the proteins of an amoeba arising by chance as one chance in $10^{400,000}$.

When you consider that the chance of winning a state lottery every week of your life from age 18 to age 99 is about one in $4.6 \times 10^{25,120}$, the odds calculated by Morowitz and Hoyle are staggering.

These odds led Fred Hoyle to state that the probability of spontaneous generation “is about the same as the
probability that a tornado sweeping through a junk yard could assemble a 747 from the contents therein. Mathematicians tell us that any event with an improbability greater than one chance in 10^{50} is in the realm of metaphysics—i.e., a miracle.

**Origin of the Software**

Shortly after the structure of DNA was deciphered, the method of information storage and retrieval used by living systems was quickly determined. While the structure of the DNA molecule in and of itself displays no intrinsic information, it does, however, have the ability to “carry” or hold information, just like the ink in these letters or the iron atoms in a floppy disc can carry meaning or information.

Remarkably, the information on the DNA molecule is stored in a “digital” fashion, expressible in distinct mathematical terms.

In recent years molecular biologists have also discovered that the information on the DNA molecule is redundant. That is, there are numerous genes (segments of DNA which code for the production of a particular protein) which occur in multiple places in the genome. Consequently, if one gene if damaged by mutations, the backup gene can take over the production of the necessary proteins.

The information storage on the DNA molecule is error correcting. When a DNA molecule is copied there are occasional errors in the placement of nucleotides, the building blocks of DNA. After the duplication of DNA, a protein moves along the newly produced “daughter molecule” and screens for copying errors. If an incorrect nucleotide is found, the correct one is placed—assuring the purest possible duplication process.

Finally, evidence is accumulating that the information on the DNA molecule is overlapping! That is, there are segments of DNA that can code for the production of more than one protein!

Could digital, error-correcting, redundant, overlapping information storage systems be the products of chance? Hardly. They are the products of PhD’s in information theory and computer science!

**Encyclopedia on a Pinhead: Chance or Design**

At the moment of conception, a fertilized human egg is about the size of a pin head. Yet, it contains information equivalent to about six billion “chemical letters.” This is enough information to fill 1,000 books, 500 pages thick with print so small you would need a microscope to read it! If all the DNA chemical “letters” in the human body were printed in books, it is estimated they would fill the Grand Canyon fifty times!

The information on the DNA molecule is transferred to RNA and ultimately to proteins in the form of structural and functional proteins (figure below).

A fundamental dilemma for the evolutionary scenario is that the duplication and translation of the information on the DNA molecule requires the employment of dozens of proteins. However, living cells cannot make proteins until the DNA-RNA replication and translation machinery is in place! Chemist John Walton noted the dilemma in 1977 when he stated:
The origin of the genetic code presents formidable unsolved problems. The coded information in the nucleotide sequence is meaningless without the translation machinery, but the specification for this machinery is itself coded in the DNA. Thus without the machinery the information is meaningless, but without the coded information the machinery cannot be produced. This presents a paradox of the “chicken and egg” variety, and attempts to solve it have so far been sterile.

The only rational explanation for this dilemma is that the protein production and DNA replication and translation machinery system arose simultaneously! This could only happen by design.

The Nature of Information

In the previous section on the origin of the cellular hardware, we presented abundant evidence which mitigates against the spontaneous origin of DNA and proteins. However, for the purpose of this section we will allow that sometime on the early earth the oceans became filled with spontaneously derived DNA.

The question we must now answer is this: Would a DNA molecule that arose by chance possess any information, codes, programs, or instructions? According to the basic principles of information theory the answer is clearly NO! The sequence of letters in a book, beads on a string, or iron atoms on a computer disc drive have meaning because the sequences are interpreted within the framework of a preexistent language convention.

Without a knowledge of the conventions (rules and regulations) which govern information systems or languages, a sequence of letters, beads on a string or dots and dashes, are meaningless.

In all information storage systems, the rules and regulations used to interpret sequences must be devised first. Consequently, spontaneously generated letters on a page or nucleotides on a DNA molecule have no meaning (i.e., information) unless rules exist first, by which the sequences are interpreted. Put another way, when we devise a language system we “hang” meaning on the sequence of letters or any information storage medium one chooses.

The Monkey and the Typewriter

On June 30, 1860, at the Oxford Union in England, the “Great Debate” occurred between the Anglican Archbishop of Oxford University, Samuel Wilberforce and evolutionist and agnostic, Thomas Huxley.

Bishop Wilberforce, a Professor of Theology and Mathematics at Oxford University, applied the logic of the teleological argument for God. He argued, as did William Paley, that the design we see in nature required a Designer. Therefore, the information (an evidence for design) found in living systems could not arise by chance.

Huxley, on the other hand, declared that given enough time all the possible combinations of matter, including those necessary to produce a man, will eventually occur by chance molecular movement.

To prove his point, Huxley asked Wilberforce to allow him the service of six monkeys that would live forever, six typewriters that would never wear out, and an unlimited supply of paper and ink.

He then argued that given an infinite amount of time, according to the Law of Probability, these monkeys would eventually type all of the books in the British Library, including the Bible and the works of Shakespeare!
Wilberforce lost the debate because he did not see the flaws in Huxley’s argument. First, the ink from Huxley’s typewriters is placed on the paper irreversibly. That is, it “types in” but it doesn’t “type out.” Chemical reactions in living systems are not this way. They are reversible. In a watery environment, amino acids and nucleotides bond (“type in”) and they unbond (“type out”). In fact, they unbond with much greater facility. Consequently, they will have “typed in” as much in 5 billion years as they would have in five minutes!

Secondly, because the building blocks of life occur in right- and left-handed forms, every other keystroke the monkey strikes (representing the addition of another building block to a DNA or protein molecule) is potentially lethal to the organism! How far do you think the monkey will get with those odds?

In his characteristic style, Sir Fred Hoyle comments on the improbability that Huxley’s monkeys might type the genetic code:

No matter how large the environment one considers, life cannot have had a random beginning. Troops of monkeys thundering away at random on typewriters could not produce the works of Shakespeare, for the practical reason that the whole observable universe is not large enough to contain the necessary monkey hordes, the necessary typewriters, and certainly the waste paper baskets required for the deposition of wrong attempts. The same is true for living material.

ET: The Sower of Life?

In the 1970s speculation on the origin of life took an unexpected and bizarre turn. Because the laws of chemistry, physics, and mathematical probability so mitigate against the possibility of spontaneous generation, scientists began to look for an extraterrestrial source for the origin of life!

Francis Crick, codiscoverer of DNA and one of the most respected molecular biologists in the world, has conceded that the spontaneous origin of life on earth is “almost a miracle.” Consequently, since life could not have arisen by chance, he proposed that the first life forms on earth were single-celled “spores” delivered here from interstellar space!

This theory, called “Directed Panspermia,” then asserts that these “interstellar spores” subsequently evolved into all the life forms on earth. Similar conclusions were drawn by Hoyle in his book, Evolution From Space.8

This bizarre turn of events begs the question. If we were sprinkled by an extraterrestrial, who made the ET? Eventually, we must explain the origin of the information on the DNA molecule.

Random chance is always the rival conjecture of information. In the real world, information is always the result of intelligent contrivance by at least two minds. And in a finite universe this means a Transcendent Creator!

The Creator Beyond Time and Space.

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Notes:
3. This is detailed in chapter three in *The Creator Beyond Time and Space*, Mark Eastman, Chuck Missler, 1-800-KHOUSE1.

Resources for Further Study


Also by Chuck Missler:
- *The E.T. Scenario*. This unusual presentation of the reality of the Bible has become a classic.
- *Beyond Time and Space*. The Theory of Relativity and other discoveries on the Biblical view of our origin, existence, and destiny.
- *Beyond Coincidence*. Biblical structures and designs in the universe that are “beyond coincidence.”
- *Beyond Perception*. This study explores the strange world of quantum physics and the quest for a “Theory of Everything.”
- *Genesis and the Big Bang*. Recent discoveries in the scientific fields have cast new light on Genesis 1.
- *Signs in the Heavens*. The Hebrew “Mazzeroth” (Zodiac) appears to have profound Biblical implications. The Long Day of Joshua is also explored.
Commentaries on Tape

Chuck Missler’s Expositional Commentaries are now available from Koinonia House. Each volume consists of eight cassette tapes and includes notes, diagrams, and a comprehensive bibliography. Write for a complete list.

Monthly News Journal

Personal UPDATE, a monthly news journal highlighting the Biblical relevance of current events, is also available by writing:

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