

# Science and the Bible

## *A Search for Meaning & Significance*

### The Anthropic Principle – Part 1

#### *Welcome/Opening Notes/Prayer/Video*

Foundational Principle for the Entire Study: **Test everything. Hold on to the good.**

The Premise of this Study: **The Facts of Nature and the Bible are the same.**

**Clarification on Dark Energy:** “Astronomers have yet to determine the nature of Dark Energy precisely enough to make a confident pronouncement.” (Hugh Ross in *Why the Universe is the Way It Is*, 2008).  
Present Thoughts on Dark Energy: Dark Energy is a force like Gravity, but acts in opposition to gravity. However, unlike gravity, Dark Energy appears to also have mass that occurs at the surface of the expanding universe. The density of Dark Energy seems to be constant through time, so its early effect on expansion was small, but has grown, because of the increasing size of the universe’s surface, and is now dominating over gravity and accelerating the expansion rate of the universe.

**The Anthropic Principle:** The belief and observation that the universe is expressly designed and created for the benefit of Earthly human life. (*anthropos*: man)

Psalm 8:3-6 *When I consider your heavens, the work of your fingers, the moon and the stars, which you have set in place, what is man that you are mindful of him, the son of man that you care for him?*

*You made him a little lower than the heavenly beings and crowned him with glory and honor.*

*You made him ruler over the works of your hands; you put everything under his feet.*

#### *Historical View of the Universe – A Brief Review*

##### **Early Viewpoints:**

- Earth-Centered (Geocentric) Universe
  - Aristotle (4<sup>th</sup> Century BC)
  - Claudius Ptolemy (2<sup>nd</sup> Century)
- Sun-Centered (Heliocentric) Universe
  - Nicolaus Copernicus (16<sup>th</sup> Century)
  - Galileo Galilei (17<sup>th</sup> Century)

#### *The Naturalistic Perspective*

**The Copernican Principle (16<sup>th</sup> Century):** Initially, the Copernican Principle was simply the theory Copernicus presented in the 1500’s stating that the Sun is at the center of the Universe (Heliocentrism), instead of the Earth (Geocentrism). This represented a radical change in perspective for both the Science and Christian communities, but was confirmed 100 years later by Galileo.

“The mechanism of the universe, wrought for us by a supremely good and orderly Creator, [is] the system the best and most orderly artist of all framed for our sake.” Nicolaus Copernicus

**The Copernican Principle (20<sup>th</sup> Century):** However, beginning in the mid-1900's, the Copernican Principle began to be used as an indication of the Earth simply being one of a countless number of ordinary planets throughout the universe. This concept was presented as undeniable fact in TV presentations by agnostic astronomers Robert Jastrow and Carl Sagan in the late-1900's. (also: Principle of Mediocrity)

“Who are we? We find that we live on an insignificant planet of a humdrum star lost in a galaxy tucked away in some forgotten corner of a universe in which there are far more galaxies than people.” Carl Sagan

“The universe is populated by innumerable Earths and, perhaps, innumerable forms of life.” Robert Jastrow

“Because of the reflection of sunlight, the Earth seems to be sitting in a beam of sunlight, as if there were some special significance to this small world. ... Our posturing, our imagined self-importance, the delusion that we have some privileged position in the universe are challenged by this point of pale light. Our planet is a lonely speck in the great enveloping cosmic dark.” Carl Sagan, *Pale Blue Dot*

### *The Anthropic Principle – Foundational Thoughts*

**Discussed Concepts:** Habitable Zone, Discoverability Zone, Comprehensibility, Goldilocks Principle

**Habitable Zone:** A volume of space where the conditions are favorable for the existence of advanced life.

Uninhabitable Zones: empty space, interior of stars, cold gas clouds, surface of gas giant planets, etc.

General Requirements for Advanced Life:

- † Water existing in all 3 states: solid, liquid, gas
- † Protection from most colliding objects
- † Temperate temperatures
- † Radioactive interior
- † Varying seasons
- † Orbital stability
- † Oxygen atmosphere
- † Ample visible light
- † Minimum amount of radioactive bombardment

**Discoverability Zone:** A volume of space where and a period of time when the conditions are favorable for the observation of the universe.

Three Characteristics of Discoverability:

1. Earth is in the Best Location to see the Cosmos
2. Man Exists at the Best Time to see the Cosmos
3. Cosmic Fine-Tuning Proof of Anthropic Principle

**Comprehensibility:** The ability of Mankind to observe, understand and characterize the origin and history of the universe.

Man has determined that the Universe is 13.73 Billion Years Old and the Earth is 4.566 Billion Years Old.

**Goldilocks Principle:** When applied to the fine-tuning of the universe, it means that certain factors must be within limited ranges for advanced life to be possible. In other words, an essential characteristic cannot vary significantly toward either extreme, but must be “Just Right”.

Biblical passages are taken from the NIV1984.

### *Qualitative Descriptions of the Fine-Tuning for Advanced Life*

**Moon:** A planet with favorable conditions for advanced life must also have a Just-Right moon.

- † The average distance from the Moon to the Earth is about 240,000 miles.
- † The Moon's diameter is 27% of the Earth's diameter.
- † The Moon's volume is 2% of the Earth's volume.

**Companion Planets:** A planet with favorable conditions for advanced life must also have companion planets like Jupiter, Saturn, Uranus and Neptune that are Just-Right.

- † Jupiter's diameter is 11 times the Earth's diameter.
- † Jupiter's volume is 1300 times the Earth's volume.

**Star:** A planet with favorable conditions for advanced life must have a Just-Right home star, like the Sun.

- † The Sun's diameter is 109 times the Earth's diameter.
- † The Sun's volume is 1.3 million times the Earth's.

Home Star Fine-Tuning

- Ⓢ The Star must be a Single or Bachelor Star, not in a Multiple Star System.
- Ⓢ The Star must be in a Galaxy with active Star Formation.
- Ⓢ The Home Star must be Just-Right Sized.

**Galaxy:** A planet with favorable conditions for advanced life must be within the Just-Right type of galaxy.

- † Irregular Galaxies are too active and too small.
- † Elliptical Galaxies are too active and their star formation has ceased.
- † Spiral Galaxies are Just-Right; however, only about 5% of the galaxies are spirals.

Spiral Galaxy Fine-Tuning: generally, they have enough White Dwarfs and Supernovae.

### *Summary and Conclusions*

**Question:** Does it seem reasonable that a Universe which was the product of only random, chaotic naturalistic processes would have such finely-tuned properties capable of being understood, described and predicted in great detail by mankind?

**Answer:** No, it is not logical, because the naturalistic, Darwinian processes are based on the necessity for existence, and these intellectual characteristics (comprehensibility) have nothing to do with survivability. "The most incomprehensible thing about the universe is that it is comprehensible." Albert Einstein

**Conclusion:** **An objective, rational person who carefully considers the apparent uniqueness of the Habitability existing on Earth, the ideal Discoverability of the universe from Earth at this time in the history of the heavens and mankind's Comprehensibility of the vast, complex cosmos must conclude there is a loving, artistic, dedicated and generous Designer who Created the Universe specifically for the benefit of Humanity: the Anthropic Principle.**

### *Questions?*

### *Glimpse Ahead and Conclusion*

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