

## Genesis Session 2: Day One

### Genesis 1:2-5

#### Creation Week: Sunday, Day One

The Holy Spirit Moves... The “Gap” Theory; Origin of Satan; The Mysterious Nature of Light.

The details of these early chapters of Genesis—the Creation and the Flood—pervade the entire Bible, and are clearly confirmed in the New Testament and by Jesus Christ personally. God does not deceive or lie: we must not put these issues in a closet; they are fundamental to the entire Biblical plan of redemption.

- 1] In the beginning God created the heaven and the earth.
- 2] And the earth was without form, and void; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters.

“And the earth was without form, and void...”:

הָיָה = *hayah*, “had become” (pluperfect form);  
תָּהוּ = *tohu*, “without form,” confused;  
בְּהוּ = *bohu*, “void,” empty, waste (Isa 34:11; Isa 45:18; Jer 4:23-26);  
וַ = *vav* conjunction. In the Septuagint (LXX) it is translated as the adversative δὲ “but” (as in 2:17; 17:21; Zeph 1:13; Ps 44:17).

The word order (normally conjunction, verb, subject, object) is reordered to suggest the pluperfect form: “had become.” (Just as Lot’s wife “became” a pillar of salt in Gen 19:26.)

- 2] **But** the earth **became** without form, and void; and darkness was upon the face of the deep.

“...and darkness was upon the face of the deep”:

חֹשֶׁךְ = *choshek*, unnatural darkness (Ex 10:21);  
תְּהוֹמִים = *tehowm*, (LXX: ἄβυσσος *abussos*, abyss; the home of demons and evil spirits.

#### Some Basic Issues

When were the angels created? When did Satan Fall? Is there a “gap” between v.1 and v.2?

## The “Gap” Theory

Originally suggested by Thomas Chalmers in 1814, it is supported by G. H. Pember, D. G. Barnhouse, G. Campbell Morgan, A. Custance, et al. It is highly speculative and controversial, yet seems to link with other passages. Although it is provocative, it is often misapplied...

Did you know that the angels witnessed “the foundation of the earth”?

*Where wast thou when I laid the foundations of the earth? declare, if thou hast understanding. Who hath laid the measures thereof, if thou knowest? or who hath stretched the line upon it? Whereupon are the foundations thereof fastened? or who laid the corner stone thereof? When the morning stars sang together, and all the sons of God shouted for joy?*

Job 38:4-7

*Bar HaElohim*: “Sons of God” = angels in the Old Testament. Ranks of angels: “Principalities,” “Powers,” et al. “Cherubim” were apparently the top “SuperAngels”: they were *already present* when “the foundations of the earth” were laid!

## Satan: His Origin, Agenda, and Destiny

### Ezekiel 28:12-19

- 12] Son of man, take up a lamentation upon the king of Tyrus, and say unto him, Thus saith the Lord GOD; Thou sealest up the sum, full of wisdom, and perfect in beauty.
- 13] Thou hast been in Eden the garden of God; every precious stone *was* thy covering, the sardius, topaz, and the diamond, the beryl, the onyx, and the jasper, the sapphire, the emerald, and the carbuncle, and gold: the workmanship of thy tabrets and of thy pipes was prepared in thee in the day that thou wast created.

Ezek 28:2-11 is written to the “**Prince** of Tyre”; Ezek 28:12-19 to “**King** of Tyre”—the power *behind* the throne. He was in Eden; he was created; and, music was significant—he may have led worship. (He’s still trying!...)

- 14] Thou *art* the anointed cherub that covereth; and I have set thee *so*: thou wast upon the holy mountain of God; thou hast walked up and down in the midst of the stones of fire.
- 15] Thou *wast* perfect in thy ways from the day that thou wast created, till iniquity was found in thee.
- 16] By the multitude of thy merchandise they have filled the midst of thee with violence, and thou hast sinned: therefore I will cast thee as profane out of the

mountain of God: and I will destroy thee, O covering cherub, from the midst of the stones of fire.

- 17] Thine heart was lifted up because of thy beauty, thou hast corrupted thy wisdom by reason of thy brightness: I will cast thee to the ground, I will lay thee before kings, that they may behold thee.
- 18] Thou hast defiled thy sanctuaries by the multitude of thine iniquities, by the iniquity of thy traffick; therefore will I bring forth a fire from the midst of thee, it shall devour thee, and I will bring thee to ashes upon the earth in the sight of all them that behold thee.
- 19] All they that know thee among the people shall be astonished at thee: thou shalt be a terror, and never *shalt* thou *be* any more.

## Isaiah 14:12-17

- 12] How art thou fallen from heaven, O Lucifer, son of the morning! *how* art thou cut down to the ground, which didst weaken the nations!
- 13] For thou hast said in thine heart, I will ascend into heaven, I will exalt my throne above the stars of God: I will sit also upon the mount of the congregation, in the sides of the north:

Same communication style/technique as in Ezekiel 28: **King** of Babylon... There are five “I will...” statements “in thine heart...” This is why God *hates* pride...

- 14] I will ascend above the heights of the clouds; I will be like the most High.
- 15] Yet thou shalt be brought down to hell, to the sides of the pit.
- 16] They that see thee shall narrowly look upon thee, *and* consider thee, *saying*, *Is* this the man that made the earth to tremble, that did shake kingdoms;
- 17] *That* made the world as a wilderness, and destroyed the cities thereof; *that* opened not the house of his prisoners?

“...made the world as a wilderness...”: Revelation 12 details his career and destiny...

## Back to Genesis...

- 2] And the earth was without form, and void; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters.

מְרַחֶפֶת = *Merahefet*: to hover above, flutter, brood, vibrate, as a bird with young (Deut 32:11). *Ruach Elohim* “brooded.” Only time used in Genesis; Cf. 1 Pet 1:21, “moved by” the Holy Spirit; Cf. 2 Pet 1:21: men spake “as moved by Holy Spirit...”

- 3] And God said, Let there be light: and there was light.

The First Quote of God: “Let there be light.”

## The Mysteries of Light

Light (1:3) existed *prior* to separation of light from darkness (1:4). Light was held within the primeval mass. Note: “darkness” is not simply the absence of light (Isa 45:7). (Black Hole? Humphrey’s “white hole?”) Photons cannot travel freely until electrons are bound in stable orbits; as thermal energy falls to 3000°K, electrons bind in stable orbits and photons become visible.

**Paradoxical Nature:** Waves? Or Particles? Is the velocity of light, *c*, a constant?

**The Central Paradox:** Sir Isaac Newton (1642-1727) viewed light as a stream of particles: “corpuscular theory.” Christiaan Huygens (1629-1695) developed the wave theory of light: refraction and reflection of light.

**Wave Discoveries:** Thomas Young (1773-1829) conducted a two-slit experiment demonstrating wave-like interference of light. [Young is noted also for his work on the theories of capillary action and elasticity. He assisted in deciphering the Egyptian hieroglyphics inscribed on the Rosetta Stone. Among his important writings are works on medicine, Egyptology, and physics.] Augustin Fresnel’s (1788-1827) experiments were more complete, but still concluded wave-like actions (Newton was knighted in 1705; died in 1727. It was still too early to dethrone the idol).

**19<sup>th</sup> Century Reversal:** Leon Foucault (1819-1868) established that the speed of light was less in water than in air; no surprise for wave theory, but makes no sense in corpuscular theory of light. James Clerk Maxwell (1839-1879) discovered (among many things) that light is an electromagnetic wave. Heinrich Hertz (1857-1894) established electromagnetic transmission/reception; he clarified and expanded the electromagnetic theory of light that had been put forth by the British physicist James Clerk Maxwell in 1873. Hertz proved that electricity can be transmitted in electromagnetic waves, which travel at the speed of light and which possess many other properties of light.

**20<sup>th</sup> Century Reversal:** 1900: Max Planck’s desperate misapplication of Boltzmann’s equations worked (revealing non-continuity). Albert Einstein publishes on Planck in 1904, which leads to a revival of the

corpuscular theory of light. Energy is not continuous: found only in discrete *quanta*, which opens the door to the paradoxical world of “Quantum Physics.”

**The Wave/Particle Duality:** In 1906 J. J. Thomson won the Nobel Prize for proving electrons were particles. In 1937 his son was awarded the Nobel Prize for proving electrons were waves! The wave/particle duality is the central paradox in quantum physics. There is now compelling evidence that quanta only manifest as particles *when we are looking at them!*

## Velocity of Light?

By the 17<sup>th</sup> century, Johannes Kepler, Rene Descartes, et al., believed light was instantaneous (“c” was infinite). In 1677, Olaf Roemer measured the elapsed time between eclipses of Jupiter with its moons, yielding a *finite* speed of light. In 1729, James Bradley confirmed Roemer’s work. Over the next 300 years, the velocity of light was measured 164 times by 16 different methods.

## Setterfield-Norman Analysis

- 1677, Roemer, Io eclipse:  
– 307,600 +/- 5400 km/sec
- 1875, Harvard, (same method):  
– 299,921 +/- 13 km/sec
- 1983, National Bureau of Standards, laser:  
– 299,792.4586 +/- 0.00003 km/sec

## Regression Curve

Was light 10-30% faster in the time of Christ? 2X faster in the days of Solomon? 4X faster in the days of Abraham? 10 million times as fast prior to 3,000 B.C. (Alan Montgomery’s Cosecant<sup>2</sup> Regression: Alan Montgomery, Canadian mathematician, analyzed the data statistically and concluded that the decay of the *c* follows a cosecant-squared curve with better than a 99% correlation coefficient. Confirmatory trends appear in 475 measurements of 11 other atomic quantities by 25 methods in dynamical time.

## Other Confirmations

- M.E.J. Gheury de Bray, French astronomical journal, 1927, based on measurements over 75 years;

- T.C. Van Flandern, U.S. Naval Observatory, 1981: ***atomic clocks slowing relative to orbital clocks;***
- V.S. Troitskii, Radio-physical Research Institute in Gorky, 1987 (independent of Setterfield);
- J. Magueijo and A. Albrecht, *Physical Review*, 1999.

## Atomic vs. Orbital Time

Until 1967 (Orbital time): 1 sec = 1/31,556,925.9747 of one earth orbit around the sun. After 1967 (Atomic time): 1 sec = 9,192,631,770 oscillations of the cesium-133 atom.

If atomic clocks are “correct,” the orbital speeds of Mercury, Venus, and Mars are *increasing*. If the gravitational constant is truly constant, then atomic vibrations and the speed of light are *decreasing*.

If a planet’s orbital speed increased it would violate the law of conservation of energy. If atomic clocks are correct, the gravitational constant should change. No such variations have been detected.

If atomic frequencies are decreasing, then five properties of the atom, such as Planck’s constant, should also be changing. Statistical studies support both the magnitude and direction of this change. (Alan Montgomery and Lambert Dolphin, “Is the Velocity of Light Constant in Time?” *Galilean Electrodynamics*, Vol 4, No. 5, 1993.)

## The Red Shift of Spectra

The Basis of “Hubble’s Law,” but what do you do with the occurrences of aberrant red shifts (Halton Arp; William Tifft). Is there *quantization* of red shift data? This may be evidence of a change in the property of space: an atomic effect rather than a recessional velocity effect.

## Analogous Attributes

### God

Located at Infinity  
Infinite Power  
Omnipresence  
Omniscience

### Light

No Parallax  
Velocity limit  
Photons lack locality  
Fundamental Revelatory  
Mechanism

3] And God said, Let there be light: and there was light.

- 3] And God saw the light, that it was good: and God divided the light from the darkness.
- 4] And God called the light Day, and the darkness he called Night.
- 5] And the evening and the morning were Day One.

## Create “Darkness”?

I form the light, and create darkness: I make peace, and create evil: I the LORD do all these *things*.

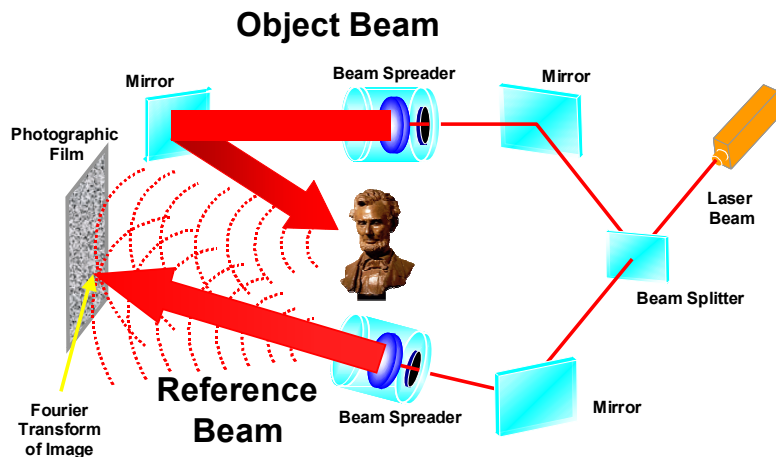
Isaiah 45:7

Photons can't leave until electrons are in a stable orbit...are these “black holes?”

## Holography: A Provocative Analogy

Holography was first developed in the 18<sup>th</sup> century, when Frenchman Jean B. J. Fourier developed transform mathematics for complex waves. In 1947, Dennis Gabor (who later won a Nobel Prize for his efforts) used holography as he was trying to improve the electron microscope.

Modern holographic images are derived from the work of Emmet Leath at the University of Michigan. (I had the pleasure of exploring computer-generated holograms with Emmet Leath in his Ann Arbor laboratory in the early '60s.)



## Holographic Properties(Fourier Transform):

- Requires proper illumination (Useless in natural light);
- Information spread over entire bandwidth (No loss from drop outs; resilient to specific interference; anticipates hostile jamming)

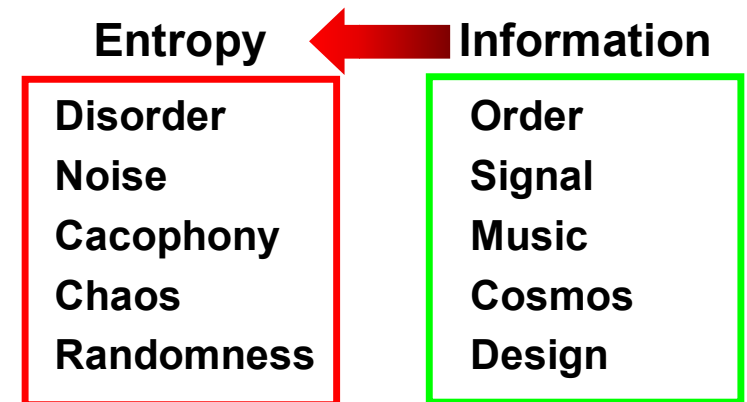
But the word of the LORD was unto them precept upon precept, precept upon precept; line upon line, line upon line; here a little, *and* there a little...

Isaiah 28:13

## Communications Engineering

- The Bible as a Hologram (Fourier Transform Properties; transcendent of parallax);
- Spread-spectrum Design (Exploitation of entire bandwidth; immunity to hostile jamming).

## Information Measures



Personal examples: closet, desk top, school locker, workshop/garage...

- 5b] And the evening and the morning were Day One.

*Remember the sabbath day, to keep it holy. Six days shalt thou labour, and do all thy work: But the seventh day is the sabbath of the LORD thy God: in it thou shalt not do any work, thou, nor thy son, nor thy daughter, thy manservant . . . nor thy stranger that is within thy gates: For in six days the LORD made heaven and earth, the sea, and all that in them is, and rested the seventh day: wherefore the LORD blessed the sabbath day, and hallowed it.*

Exodus 20:8-11

## ערב *Erev*

*Erev* means “obscuration, mixture” (increasing entropy); when encroaching darkness began to deny the ability to discern forms, shapes, and identities; hence “twilight”; the time of approaching darkness (Prov 7:9; Jer 6:4).

Sunset; marking the duration of impurity: when a ceremonially unclean person became clean again (Lev 15); the beginning of the Hebrew day

## בקר *Boker*

*Boker* means “becoming discernable, distinguishable, visible”; perception of order; relief of obscurity (decreasing entropy); attendant ability to begin to discern forms, shapes, and distinct identities; breaking forth of light; revealing; hence: dawn; morning (Gen 19:27; Kgs 19:9). It is significant that on the 7<sup>th</sup> day, when the creation is complete, there is no more “*erev*” or “*boker*.”

There seems to be a close coupling between the spiritual and physical world prior to the fall: Heb 11:3; Rom 8:19-23; Ps 102:25-27; Prov 16:33; Eph 1:11; Heb 1:2-3; Col 1:16,17. Onkelos Translation of 1:31: “...it was a unified order.”

## Next Session

What is the “Big Bang”? How can “space” be “stretched,” “rolled,” or “torn”? What two concepts in mathematics are totally elusive as far as our physical universe is concerned?

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## Study Questions

(For the diligent student.)

- 1) Why do some believe that there may have been a “gap” between Genesis 1:1 and 1:2?
- 2) What are the arguments against it?
- 3) What do we know about the origin of Satan? How do we know?
- 4) How many angels fell with Satan in his rebellion? How do we know?
- 5) What makes the nature of light paradoxical?

- 6) What are the reasons light is viewed as a stream of particles? What are the reasons that light behaves as a wave phenomena?
- 7) What are the implications if, indeed, the velocity of light has been decreasing through the ages?
- 8) Give examples of the entropy laws in everyday life.
- 9) Contrast the terms “*erev*” and “*boker*” as they are used in Genesis One. Why are they *unlikely* to simply signify “evening” and “morning”?

## Discussion Questions

(“Where two people agree, one is redundant.”)

- 1) Discuss the possibilities (and problems) with the conjectures of a “gap” between Genesis 1:1 and 1:2.
- 2) When were the angels created? When did Satan fall?
- 3) How do changes in the velocity of light impact our world views?
- 4) Are there exceptions to the entropy laws?

## Candidate Research Projects

(For the truly dedicated.)

- 1) Compile the arguments for (and against) a “gap” between Genesis 1:1 and 1:2.
- 2) Contrast the characteristics of angels, fallen angels and demons, as presented in the Bible.
- 3) Compile a history of the views concerning the nature of light from earliest times to the present day.
- 4) Compile a summary of widely held scientific views that ultimately were proven incorrect.

## Preparation for the Next Session:

Review Genesis 1. Review any available introductory literature on the nature of space and/or quantum physics.