

Astronomy and the Bible

DVD Lesson Plan

Purpose of the DVD

The purpose of the DVD is to demonstrate that only selected evidence is being presented to the public and that there are many scientific evidences that refute the evolution claims of the big bang, billions of years, and star formation by natural processes. There are many scientists that believe in a young solar system and universe because of the scientific evidence and the most logical explanation is there has to be a Creator God who created just as His Word states – in six days.

DVD Theme

The school textbooks are using deception by omitting the scientific evidence that contradicts evolution (deception by omission).

Using the DVD to build an accurate knowledge of the scientific evidences about origins

There is much misinformation being presented in school textbooks about evolution, specifically about big bang cosmology. This DVD will help the student objectively evaluate the claims used to support evolution and creation by presenting the scientific evidences not found in most textbooks.

The DVD is presented in three major sections:

1. An analysis of the scientific evidence for the age of the solar system.
2. A Biblical and scientific analysis of the origin of stars.
3. A closer look at the evidence being used to support the big bang.
4. The Bible and big bang cosmology: are they compatible?

How to Teach Using This DVD

Viewing the DVD for educational purposes (suggestions for maximizing learning)

For best learning results it is recommended that students:

1. Review the objectives.
2. Review the DVD outline.
3. Review the exercise questions prior to viewing the video. This will encourage the student to know what to look for and enable better learning.
4. While watching the video fill in the answers to each of the exercise questions so they can be used as a study guide.
5. After watching the video and studying the exercise sheet, complete the exercise again, in a test format (no notes).

DVD Objectives

At the completion of this video the student will be able to:

- State/write the differences between evolution and the Bible on the origin and age of the universe.
- State/write three scientific evidences that support a young universe.
- State/write how stars originated.
- State/write why stars do not form by gravitational collapse.
- State/write three scientific evidences that contradict the big bang.
- State/write why the redshift of starlight refutes the big bang.
- State/write three Biblical evidences that support the days of creation were literal days.

DVD Outline

Part 1: An analysis of the scientific evidence for the age of the solar system

- Two models
 1. Common beliefs of the evolution and theistic evolution models are:
 - That the universe started with the big bang.
 - That the universe is 12 – 15 billion years old.
 - That stellar formation was by natural processes.
 2. The Biblical model teaches that:
 - God spoke the universe into existence.
 - The universe is young.
 - God created the stars.
- Evidence of age
 - The proponents of the big bang model claim the universe must be old (12 – 15 billion years).
 - The proponents of the Biblical model claim the Bible teaches the universe is less than the required age for evolution to occur (young earth model).

- Are these two models really that different?
- What are the implications of accepting the big bang model as part of “In the beginning God created”?
- Implications of the big bang
 - From a Biblical perspective it means:
 - God’s creation was not 6-days.
 - The meaning of “very good” in Genesis 1:31 does not mean good.
 - Death before sin.
 - The Genesis Flood was not worldwide.
 - “All” in Colossians 1:16 does not mean all things.
 - The heavens declare long ages of trial and error rather than the glory of God. (Psalm 19:1)
- Evaluating the evidence
 - Most textbooks and science journals support billions of years for the age of the universe.
 - A question we need to ask is: “Are we being given all the evidence?”
 - We can test the accuracy and validity of each model by examining ALL the data.
 - Evidence against one position is support for the other position.
- Recession of the moon
 - The earth and moon pull on each other.
 - This causes the moon to accelerate in its orbit so that it slowly spirals away from the earth (4 cm/ year).
 - 1,000 years ago the moon was 125 feet closer to the earth.
 - 1 million years ago the moon was 28.4 miles closer to the earth.
 - 10 million years ago the moon was 284 miles closer to the earth.
 - 100 million years ago the moon was 2,840 miles closer to the earth.
 - 1 billion years ago the moon was 28,400 miles closer to the earth.
 - 1.4 billion years ago the moon was in contact with the earth. This means the moon cannot be 4.6 billion years old.
- Comets
 - If the solar system is billions of years old, then “long period” comets should not exist.
 - The evolution model postulates the long period comets are being replaced by objects from the Oort cloud.
 - There are problems with the Oort cloud:
 - It has never been observed.
 - There is NO evidence that it exists.
 - There would not be enough mass in the hypothetical Oort cloud to supply the needed comets for evolution.

“The existence of the Kuiper belt and the Oort cloud of comets has not been verified. Perhaps there is an alternative: The presence of comets may be evidence that the solar system is not as old as is often assumed.”
 Don DeYoung, Ph.D. Physics, *Astronomy and the Bible*, 2000, p. 49-50.

“Though the Oort cloud has yet to be observed, the theory accounts so well for the distribution of comets’ orbits that most astronomers today accept its existence,...

Timothy Ferris, *The Whole Shebang: A State-of-the-Universe Report*, 1997, p. 123.

Definition of faith: An unquestioning belief that does not require proof or evidence.

“Many scientific papers are written each year about the Oort Cloud, its properties, its origin, its evolution. Yet there is not yet a shred of direct observational evidence for its existence.”

Carl Sagan and A. Druyan, *Comets*, 1985, pp. 201.

“Since it cannot be detected, the Oort cloud is not a scientific concept. This is not bad science, but non-science masquerading as science. The existence of comets is good evidence that the solar system is only a few thousand years old,...

Danny Faulkner, Ph.D. Astronomy, *Technical Journal*, “More Problems for the Oort Comet Cloud”, 2001, p. 11.

- The age of the sun
 - The sun produces energy by thermonuclear fusion.
 - The core of the sun should alter and the sun should grow brighter with age.
 - If the sun is 4.6 billion years old, it should have brightened by about 40%.
 - The average temperature of the earth has been 59 F (15 C).
 - A 25% increase in brightness increases the average temperature by about 32 degrees F (18 degrees C).

- Supernova remnants

Supernova remnant	Number of observable SNRs predicted if our galaxy is:		Actual number observed
	Billions of years old	7000 years old	
First	2	2	5
Second	2260	125	200
Third	5000	0	0

- Spiral galaxies wind up too fast to be billions of years old.

“Galaxies must have condensed out of the gases expanding from the big bang....

Details of the formation of galaxies are still highly uncertain, as is their subsequent evolution.”

The Facts on File Dictionary of Astronomy, 1994, p. 172.

- Note the words “must have.”
- Why is this any more scientific than: In the beginning God created... ?

Part 2: A Biblical and scientific analysis of the origin of stars

- Origin of stars
 - Are we being told all the evidence or just selected information to support a particular idea?
 - Evolution: Stars evolved billions of years before the earth.
 - Theistic evolution: Stars evolved billions of years before the earth.
 - Bible: Earth was created on day 1 and the sun, moon, and stars on day 4.

“The entire process of stellar evolution is by natural process alone. We do not have to invoke Divine intervention at any stage in the history of the life-cycle of the stars that we observe.”

Hugh Ross (Astronomer), “Species Development: Natural Process or Divine Action,” Audiotape (Pasadena, CA: Reasons to Believe, 1990).

- Is this statement consistent with the Bible?

Genesis 1: 6 *And God made two great lights; the greater light to rule the day, and the lesser light to rule the night: he made the stars also.*

Isaiah 40:26 *Lift up your eyes on high, and behold who hath created these things, that bringeth out their host by number:...*

Psalms 8:3 *When I consider thy heavens, the work of thy fingers, the moon and the stars, which thou hast ordained;*

Ex 20:11 *For in six days...*

Ps 19:1 *The heavens declare the glory of God*

Ps 33:6 *By the word of the Lord were the heavens made; and all the host of them ...*

Ps 148:5 *... for he commanded, and they were created*

Is 45:12 ...I, even my hands, have stretched out the heavens, and all their hosts have I commanded

Nehemiah 9:6 Thou, even thou, are Lord alone; thou hast made heaven, the heaven of heavens, with all their host...

John 1: 1-3 All things were made by him...

Rev 4:11 ...for thou hast created all things, and for thy pleasure they are and were created

- Is stellar formation by natural processes compatible with Scripture? No, it is by the Word of the Lord that the universe and stars were created.
- Star formation and physics
 - The popular theory is that stars form from vast clouds of gas and dust through gravitational contraction.
 - Because of heat pressure gas and dust clouds will expand, NOT contract.

“The complete birth of a star has never been observed. The principles of physics demand some special conditions for star formation and also for a long time period. A cloud of hydrogen gas must be compressed to a sufficiently small size so that gravity dominates. In space, however, almost every gas cloud is light-years in size, hundreds of times greater than the critical size needed for a stable star. As a result, outward gas pressures cause these clouds to spread out farther, not contract.”

Don DeYoung (Ph.D. in Physics), *Astronomy and the Bible*, 2000, p. 84.

“Precisely how a section of an interstellar cloud collapses gravitationally into a star ... is still a challenging theoretical problem... Astronomers have yet to find an interstellar cloud in the actual process of collapse.”

Fred Whipple, *The Mystery of Comets*, (Washington, D.C.: Smithsonian Institute Press, 1985), pp. 211, 213.

“To many astronomers it seems reasonable that stars could form from these clouds of gas. Most astronomers believe that the clouds gradually contract under their own weight to form stars. This process has never been observed, but if it did occur, it would take many human lifetimes. It is known that clouds do not spontaneously collapse to form stars. The clouds possess considerable mass, but they are so large that their gravity is very feeble. Any decrease in size would be met by an increase in gas pressure that would cause a cloud to re-expand.”

Danny Faulkner, Ph.D. Astronomy

“There is general belief that stars are forming by gravitational collapse; in spite of vigorous efforts no one has yet found any observational indication of conformation. Thus the ‘generally accepted’ theory of stellar formation

may be one of a hundred unsupported dogmas which constitute a large part of present-day astrophysics.”

Hannes Alfvén (Nobel prize winner), Gustaf Arrhenius, “Evolution of the Solar System”, NASA, 1976, p. 480.

“Despite numerous efforts, we have yet to directly observe the process of stellar formation.... The origin of stars represents one of the fundamental unsolved problems of contemporary astrophysics.”

Charles Lada and Frank Shu (both astronomers), “The Formation of Sunlike Stars,” *Science*, 1990, p. 572.

“Stars are formed by the gravitational collapse of cool dense gas and dust clouds....

There are problems, however, in initiating the collapse of a gas cloud. It resists collapse because of firstly its internal motions and the heating effects of nearby stars, secondly the centrifugal support due to rotation, and thirdly the magnetic field pressure....

In a massive dense cloud shielded by dust, it is believed that collapse can be triggered when the cloud is slowed on passing through the spiral density-wave pattern of our galaxy:....”

The Facts on File Dictionary of Astronomy, 1994, p. 434.

- Star nurseries: Do pictures confirm stars are forming?
 - When dark nebula (mostly dust) collide with emission nebula (fluorescent regions of gas) images like the Eagle nebula form. The result is whitish areas appearing at the edges of the dark ‘fingers’ of dust. Gases at such temperatures (10,000 K) will quickly disperse.
 - Images taken by the European Southern Observatory Very Large Telescope in January 2002 of the Horsehead Nebula in Orion verified that the structures are expanding.
- Star formation and time
 - Scientists estimate that there are 100 billion galaxies (10^{11})
 - Scientists estimate that there are 200 billion stars per galaxy (2×10^{11}).
 - If we allow for the universe to be 20 billion years old (2×10^{10}), then we can perform the following calculations for how fast stars had to form:
 - $100 \text{ billion} \times 200 \text{ billion} / 20 \text{ billion years} = 1 \text{ trillion stars per year forming.}$
 - This equates to 2.7 billion stars forming every day for 20 billion years.
 - This equates to 31,700 stars forming every second for 20 billion years.
 - Scientists cannot directly observe one star forming. The numbers do not add up to support the evolution model.
- Textbooks: Are they correct?

- “A nebula is a large amount of gas and dust spread out in an immense volume. All stars begin their lives as parts of nebula. Gravity can pull some of the gas and dust in a nebula together. The interacting cloud is then called a protostar. ... A star is born when the contracting gas and dust become so hot that nuclear fusion starts.”
Prentice Hall Earth Science, 2001, p. 733.
- This statement is not based on science, but faith that stars are forming.
- Conclusion on star formation
 - “The truth is that we don’t understand star formation at a fundamental level.”
Marcus Chown, “Let there be Light”, *New Scientist*, Feb 7, 1998.
 - Here is a question we could ask: “Why do so many textbooks state we know how stars form when no one has directly observed one forming?”

PART 3: A closer look at the evidences being used to support the big bang

Are the evidences used to support the big bang (evolution) convincing enough to warrant a belief in billions of years?

- Evidences used to support the big bang:
 - Redshift
 - Cosmic Background Radiation
 - Element abundances
 - Education system and media
- Evidences that contradict the big bang:
 - Redshift
 - Cosmic Background Radiation
 - Galaxy formation
 - Spiral Galaxies
 - SNR
 - Distribution of galaxies
 - 1st and 2nd Laws of Thermodynamics
 - Medium and heavy elements
 - Star formation
- The big bang
 - “Fifteen to twenty billion years ago a big bang, or explosion, occurred, creating the universe. The universe began as an infinitely dense, hot fireball, a scrambling of space and time.”
The Handy Space Answer Book, 1998
 - The big bang is an expansion of space and time.
 - The big bang postulates that there is not a center to the universe.
 - Does this sudden explosion of nothing into something (the universe) sound like a miracle?

Paul Davies, physicist and evolutionist, in his book - *The Edge of Infinity*, describes the big bang this way:

“[The big bang] represents the instantaneous suspension of physical laws, the sudden abrupt flash of lawlessness that allowed something to come out of nothing. It represents a true miracle...”

- Why is this more scientific than – “In the beginning God created?”
- Redshift of starlight
 - Redshifts are used to describe the expansion of the universe – the distance of a galaxy from the earth due to the stretching of the light waves.
 - If a light source is moving toward you it is blue-shifted on the light spectrum (compressed wave).
 - If a light source is moving away from you it is red-shifted on the light spectrum (stretched wave).
 - Almost everything in the universe is red-shifted.
- Redshift interpretation
 - The redshift represents an *expansion* redshift not a Doppler shift (velocity).
 - It represents a shift in frequency.
 - Using a combination of redshifts and Hubble’s law, scientists calculate the distances of galaxies from the earth.
 - Almost all galaxies are redshifted.
 - We should observe redshifts at all distances along the light spectrum (big bang model). But we don’t.
 - What scientists observe are distinct quanta (redshifts coming at distinct intervals).
 - The redshifts are observed to be at 1-million light-year intervals.
 - The redshifts form concentric circles around our galaxy at distances of 1-million light-year intervals.
 - These distinct intervals have been confirmed by astronomers.

“There is now very firm evidence that redshifts of galaxies are quantized ...”

W. G. Tifft and W. J. Cocke, Global redshift quantization, *Astrophysical Journal*, 1984.

“Astronomers have confirmed that numerical values of galaxy redshifts are ‘quantized’, tending to fall into distinct groups. ...

That would mean the galaxies tend to be grouped into (conceptual) spherical shells concentric around our home galaxy.”

Russell Humphreys, Ph.D. Physics, *Technical Journal*, 2002

“... the redshift distribution has been found to be strongly quantized in the galactocentric frame of reference. The phenomenon is easily seen

by eye and apparently cannot be ascribed to statistical artifacts, selection procedures or flawed reduction techniques.”

W. Napier and B. Guthrie, Quantized redshifts: a status report, *Journal Astrophysics and Astronomy*, 1997.

- What does this mean to the big bang?
- To understand how these observed redshifts effect the big bang we need to understand that the big bang relies on two assumptions:
 1. There is no center to the universe.
 2. The universe is homogeneous (there is no special place in the universe).
- The Copernican Principle
 - In 1543, Copernicus proposed that the earth is not at the center of the universe. The Copernican or Cosmological Principle is a key ingredient to modern cosmology which states that we are in no preferred (special) place in the universe. This would mean that the universe appears the same in all directions when viewed from any point in space.

“In the earliest cosmologies, man placed himself in a commanding position at the centre of the universe. Since the time of Copernicus we have been steadily demoted to a medium sized planet going round a medium sized star on the outer edge of a fairly average galaxy, which is itself simply one of a group of galaxies.”

Stephen Hawking and George Ellis, *The Large Scale Structure of Space*, Cambridge University Press, 1973, p. 134.

“The Copernican revolution taught us that it was a mistake to assume, without sufficient reason, that we occupy a privileged position in the universe.

Darwin showed that, in terms of origin, we are not privileged above other species.

Our position around an ordinary star in an ordinary galaxy in an ordinary supercluster continues to look less and less special.

The idea that we are not located in a special spatial location has been crucial in cosmology, leading directly to the [big bang theory] In astronomy the Copernican principle works because, of all the places for intelligent observers to be, there are by definition only a few special places and many nonspecial places, so you are likely to be in a nonspecial place.”

Richard Gott (Ph.D. Astrophysics), Implications of the Copernican principle for our future prospects, *Nature*, 1993.

- From the perspective of the evolution model we are:
 - A non-special species.
 - Living in a non-special place in the universe.
 - An accident of chance occurrences.

- Does the evidence really support this idea? The answer is NO. The observable information on redshifts contradicts the standard story.

“...the quantized distribution of galactic red shifts, observed by various astronomers seems to contradict the Copernican principle and all cosmologies founded on it – including the big bang.”

Russell Humphreys, Ph.D. Physics, *Starlight and Time*, 1994, p. 128.

“The fact that measured values of redshift do not vary continuously but come in steps – certain preferred values – is so unexpected that conventional astronomy has never been able to accept it, in spite of the overwhelming observational evidence.”

Halton Arp (Staff astronomer at the Mount Wilson and Palomar Observatories for 29 years), *Quasars, Redshifts and Controversies*, 1987, p. 195.

- Summary of evidences of the big bang:
 - Evidence appears to support the big bang only when contradictions are ignored (textbooks).
 - The big bang model is constantly changing to match the data.
 - The big bang model cannot explain much of the observed data.

“In a nutshell, the Big Bang, or, as some cosmologists prefer to call it, ‘the Standard Model of Cosmology,’ goes something like this.

About 15 billion years ago, the universe erupted from an enormous and still unexplained event – often referred to as a ‘singularity’ – from which all of space and matter were created.

That’s why you can’t say it was an explosion. Nothing can’t explode.

And at the instant of the Big Bang, there was something. It’s a little like a cosmic episode of *Seinfeld*, the show about nothing. It also didn’t happen anywhere – that is in a single location – but everywhere.”

Kenneth C. Davis, *Don’t Know Much About The Universe*, 2001, p. 298.

PART 4: The Bible and big bang cosmology: are they compatible?

- Genesis and the big bang

“There are many today who interpret Genesis in terms of the latest scientific theories and even fads. If the history of science is any teacher, then we must conclude that many of these ideas eventually will be discarded.

If we have staked out a position that Genesis teaches these ideas, then what is to become of Genesis when these are abandoned? A great concern of mine is that many Christians have wedded the creation account of the Bible to the big bang theory,...

Danny Faulkner, Ph.D. Astronomy

“First, big-bang cosmology, even though it is currently by far the most popular cosmology and even though it is presented as undoubtedly true, is beset with a number of serious observational and theoretical difficulties.”

John Byl, Ph.D. Astronomy, *God and Cosmos: A Christian View of Time, Space, and the Universe*, 2001, p. 72.

“It is a great pity that many Christians are willing to 're-interpret' the infallible Word of God to fit a fallible, man-made theory like the 'big bang'.

Such ideas are ultimately devised to counter the biblical record, which is firmly against cosmic evolution over billions of years.

Those who urge trying to harmonize the big bang with Scripture find it only natural to go on to other evolutionary ideas, such as a 'primitive earth' gradually cooling down, death and struggle millions of years before the Fall, and so on.”

Werner Gitt, Ph.D. Physics, *Creation ex nihilo*, 1998

- Scientists who believe in a literal 6-day creation:
 - Danny Faulkner Ph.D. Astronomy
 - John Byl Ph.D. Astronomy
 - Tom Greene Ph.D. Astronomy
 - Dave Harrison Ph.D. Astrophysics
 - James Dire Ph.D. Astrophysics
 - John Rankin Ph.D. Mathematical Physics
 - Keith Wanser Ph.D. Condensed Matter Physics
 - Russell Humphreys Ph.D. Physics
 - Don DeYoung Ph.D. Physics
 - Robert Gentry Ph.D. Physics
 - Eugene Chaffin Ph.D. Nuclear Physics
 - Ron Samec Ph.D. Physics
 - John Cimbala Ph.D. Aeronautics
 - Andrew McIntosh Ph.D. Combustion Theory
 - Hee-Choon No Ph.D. Nuclear Engineering
 - Jay Wile Ph.D. Nuclear Chemistry
 - Ker Thompson Ph.D. Geophysics
- The Bible and the time of creation
 - Each of the following are Biblical evidences that the days of creation were literal days and not long ages.
 - Day with a number
 - Evening and morning
 - Genesis 1:14
 - Exodus 20:11, 31:17
 - Words used to indicate time
 - Sentence structure

- Genealogies (Gen 5, 1 Chron 1, Luke 3)
- Plants and sunlight
- The sun
- The plain reading of the text
- Lexicons and theological dictionaries
- Semantics
- The Bible declares 17 times that God stretched the heavens

2 Sam 22:10	Job 37:18	Isaiah 51:13
Psalms 18:9	Isaiah 40:22	Jeremiah 10:12
Psalms 104:2	Isaiah 42:5	Jeremiah 51:15
Psalms 144:5	Isaiah 44:24	Ezekiel 1:22
Job 9:8	Isaiah 45:12	Zechariah 12:1
Job 26:7	Isaiah 48:13	
- We have a God of miracles:
 - God created trees mature with fruit.
 - God created mature animals.
 - God created Adam mature.
 - Jesus fed the 5,000.
 - Jesus turned water into wine.
 - Jesus withered the fig tree (Matt 21:18-19).
 - There was instant learning of language (Tower of Babel).
 - There was instant healing of a soldier's ear (Luke 22:51).
 - Creation was "very good" (Gen 1:31).
- The pattern of evolution is:
 - Not reporting all the evidence.
 - Constantly updating the big bang model to match observed data.
 - Disagreement among astronomers.
 - A disregard for Biblical interpretation.
 - An appeal to churches to accept "real science" (you can have evolution and the Bible).
- Critical thinking: Which is easier to believe?
 - Nothing created something (the universe).
 - God used evolution.
 - In the beginning God created...
- The Bible teaches why so many choose to believe in "nothing created something" or why many embrace theistic evolution.

For the time will come when they will not endure sound doctrine, but after their own lusts shall they heap to themselves teachers, having itching ears;

And they shall turn away their ears from the truth, and shall be turned unto fables.

2 Timothy 4:3-4

- Questions from scientists:
 - “Moreover there are some questions that scientists still do not know how to ask, let alone answer, scientifically.
 - Was there anything before the Big Bang?
 - Is there a role for life in the cosmos?
 - Why is there something rather than nothing?
 - Will we ever know?”
- The Bible has answers:
 - The creation by God gives meaning to the universe.
 - We were made in the image and likeness of God.
 - John 3:16

INTERVIEWS

Danny Faulkner, Ph.D. Astronomy

ADDITIONAL RESOURCES

Astronomy and the Bible, By Donald DeYoung

Our Created Moon, By Don DeYoung and John Whitcomb,

The Astronomy Book, By Jonathan Henry

Design and Origins in Astronomy, Edited by Don DeYoung and Emmett Williams

EXERCISES

Exercises can be given in multiple ways to check the student’s knowledge of the information presented on the DVD. Two methods have been included in this lesson plan.

1. Essay format
2. Fill-in and multiple choice format

The following pages include both formats.

Exercise
Astronomy and the Bible (essay format)

1. What are the major differences between evolution and the Bible about the origin of the universe, the age of the universe, and the origin of stars?

2. What are the major differences between the theistic evolution models (day-age theory and progressive creationism) and the Bible about the origin of the universe, the age of the universe, and the origin of stars?

3. Give three examples where Biblical interpretation is affected if the big bang and long ages are true.

4. What affect does each of the following have on the age of the universe?
 - a. The recession of the moon:

 - b. The age of the sun:

 - c. Short or long period comets:

 - d. Supernova remnants:

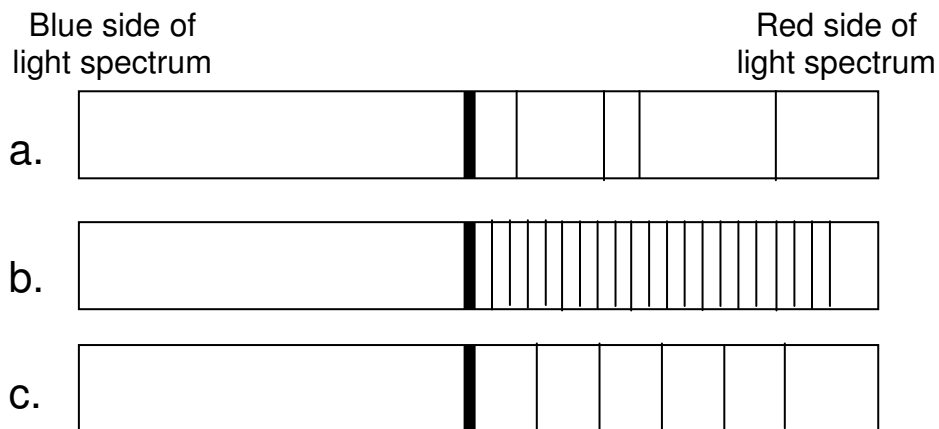
5. Does the Bible teach that God made the stars or that they evolved into existence by natural processes? (Support your answer with Scripture references).
6. According to the model of evolution how do stars form?
7. Based on known physics what is wrong with the evolution model for star formation?
8. Do pictures of “star nurseries” like the Eagle nebula confirm the evolution model that stars are forming?
9. If evolution is true, how many stars must have formed every second for the last 20 billion years?
10. Give two evidences used to support the big bang.
11. Give four evidences that contradict the big bang.

12. Describe the big bang.

13. One assumption of the big bang is that the universe is homogeneous (meaning there is no special place in the universe). What is another assumption?

14. What is the redshift of starlight used to describe?

Use the following diagrams to answer questions 15 and 16. The thin lines represent redshifts on the light spectrum.



15. Which diagram best represents what we should observe based on the big bang?

16. Which diagram best represents what we actually observe?

17. What is the Copernican Principle?

18. Describe the difference from the actual observations of redshifts and what the big bang model predicts. What does this mean to big bang cosmology?
19. Give three Biblical evidences that the creation days were literal days.
20. What Bible verse teaches why so many people refuse to believe in a Creator God and choose to believe nothing created the universe?

Exercise
Astronomy and the Bible (multiple choice/ fill-in format)

1. Fill in the following blanks based on what each model states.

	Origin of the universe	Age of the universe	Origin of stars
Evolution			
Theistic evolution			
Bible			

2. If the big bang is true, how does it affect Biblical interpretation? (Circle all that apply.)

- a. God did not create in six literal days as Genesis 1 and Exodus 20:11 indicate.
- b. There would have been death before sin.
- c. Abraham could not have been the father of Isaac.
- d. The Genesis Flood would have to have been a local flood, not a worldwide flood.

3. The moon has been measured to be receding from the earth by about two inches a year. If we extrapolate this back in time, when would the moon have been in contact with the earth?

- a. 6,000 years ago
- b. 10,000 years ago
- c. 1.4 million years ago
- d. 4.6 billion years ago

4. What significance do comets have on the age of the solar system?

- a. The presence of comets is good evidence that the solar system is young.
- b. The presence of comets has no effect on the age of the solar system.
- c. The presence of comets means there was once a planet between Earth and Mars.
- d. The presence of comets proves that the solar system must be billions of years old.

5. According to evolutionists how are short period comets being replaced?
 - a. The Kuyper Belt
 - b. The Van Allen Belt
 - c. The Oort Cloud
 - d. The Milky Way
6. What is significant about the Oort Cloud?
 - a. It supplies objects for short period comets.
 - b. It is known to supply objects for long period comets.
 - c. It has never been observed.
 - d. It is a verified cloud of comets beyond the planet Pluto.
7. If the sun is 4.6 billion years old, what can be said about the climate on earth 3.5 billion years ago?
 - a. The average temperature would be too cold for the evolution of life.
 - b. The average temperature would be too hot for the evolution of life.
 - c. The earth's climate would be the same as it is today.
 - d. The earth's climate would be much like a greenhouse effect.
8. If the universe is billions of years old, we should observe thousands of third stage supernova remnants. How many have actually been observed?
 - a. 200
 - b. 0
 - c. 2,260
 - d. 5,000
9. How do galaxies form?
 - a. Gases left over from the big bang spiral inward to form galaxies.
 - b. Nearby stars gravitationally attract each other over millions of years to form clusters called galaxies.
 - c. There is no scientific (naturalistic) proof how galaxies form.
 - d. Galaxies do not really exist, they are dust clouds left over from the big bang.
10. What is significant about the following statement from the *Facts on File Dictionary of Astronomy*?

“Galaxies must have condensed out of the gases expanding from the big bang?”

- a. It demonstrates observable evidence for how galaxies form.
- b. The words “must have” indicate it is a faith-based statement.
- c. Since it is in a science dictionary it must be a true statement.
- d. It confirms the universe has to be billions of years old.

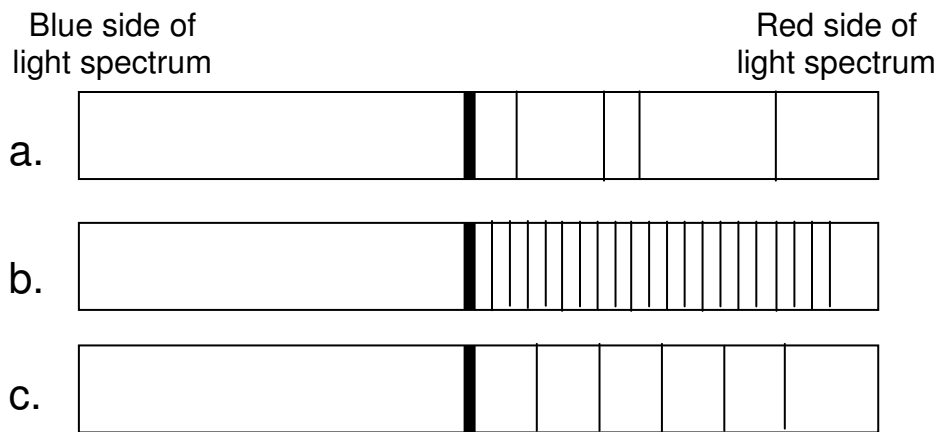
11. According to progressive creationists how did stars originate?
- a. By natural processes
 - b. God made all the stars
12. Is stellar formation by natural processes alone compatible with the Bible?
- a. Yes
 - b. No
13. Has the complete formation of a star ever been observed?
- a. Yes
 - b. No
14. Stars are formed by the gravitational collapse of a gas cloud.
- a. True
 - b. False
15. When a gas cloud begins to gravitationally collapse inward _____
_____ will counteract this collapse and cause it to expand.
16. Have “star nurseries” such as the Eagle Nebula, been confirmed to be forming stars?
- a. Yes
 - b. No
17. If the universe is billions of years old, how many stars would have had to form per second over the last 20 billion years?
- a. 16
 - b. 200
 - c. 750
 - d. 31,700
18. Give two evidences used to support the big bang.

19. Give two evidences that contradict the big bang.

20. Which explanation best describes the big bang?
- It was a large explosion much like a bomb detonating.
 - It was a hot fireball expansion of space and time.
21. What makes the big bang a faith-based argument rather than a scientific argument? (circle all that apply)
- Evolutionists cannot explain the origin of the matter and energy that exploded.
 - Evolutionists cannot explain why the "ball of matter" suddenly exploded.
 - It is based on an historic event and has never been observed.
 - The big bang does not agree with known laws of science and there are many scientific contradictions.
22. What is meant by the redshift of starlight?
- The redshift is when the light from stars appears red instead of blue.
 - The redshift is an explanation for how stars form.
 - When a light source (star) is stationary, the wavelengths of the light become compressed.
 - When a light source (star) is moving away from an observer, its wavelengths will be stretched and appear on the red side of the light spectrum.
23. How is the redshift used to support the big bang model? (circle all that apply)
- To show the universe is expanding.
 - Since almost all galaxies in the universe are redshifted, this confirms everything is expanding outward from an initial explosion (big bang).
 - The redshift, along with the Hubble constant, have shown that galaxies are so distant that they had to form billions of years ago.
 - Our galaxy is near the center of the universe.
24. The redshift of starlight has been observed to be at _____ light year intervals.
- thousand
 - Million
 - 10-million
 - Billion
25. What conclusion can be made about observing redshifts at distinct intervals and as concentric circles around our galaxy? (circle all that apply)
- The earth must be in the center of the universe.
 - There is a center to the universe and our galaxy (the Milky Way) is near the center.
 - The big bang is now a confirmed fact.
 - The universe is not homogeneous and there are special locations.

26. The redshift has been confirmed to show up as concentric circles at distinct intervals around our galaxy. What does this mean to the big bang model?
- It has no effect on the big bang since this is what the big bang actually predicts.
 - It is a new feature that can be incorporated into the big bang.
 - It contradicts the big bang's premise that there is no center to the universe and that there is no special place in the universe.
 - It means the big bang and the expansion of the universe had to happen faster than previously thought.

Use the following diagrams to answer questions 27 and 28. The thin lines represent redshifts on the light spectrum.



27. Which diagram best represents what we should observe based on the big bang (A B C)?
28. Which diagram best represents what we actually observe (A B C)?
29. The Copernican Principle (also called the Cosmological Principle) is a key ingredient to big bang cosmology. It states that we are in no special place in the universe and that the universe appears the same in all directions. How does this compare to the observed redshift data?
- The observed redshift data contradicts the Copernican Principle and all cosmologies based on it (including the big bang).
 - The observed redshift data confirms the Copernican principle.
30. What can be concluded about big bang cosmology? (circle all that apply)
- Evidence appears to support the big bang only when contradictions are ignored.

- b. The big bang model is constantly changing to match the data.
 - c. The big bang model cannot explain much of the observed data.
 - d. Since the big bang is the best model we have, it should be taught as a fact.
31. Are there any astronomers or physicists that believe in a literal 6-day creation about 6,000 years ago?
- a. Yes
 - b. No
32. Which of the following are evidences that the days of creation in Genesis chapter 1 were literal days and not long ages? (circle all that apply)
- a. The use of day with a number.
 - b. The use of “evening and morning” with the word day.
 - c. Exodus 20:11
 - d. There are no evidences.
33. What Bible verse teaches why so many people refuse to believe in a Creator God and choose to believe “nothing” created the universe?
- a. Genesis 1:31
 - b. John 3:16
 - c. 2 timothy 4:3-4
 - d. Romans 1:16

Exercise
Astronomy and the Bible (essay format)
Answer Key

1. Evolution teaches the universe appeared out of nothing. The Bible teaches God spoke the universe into existence.

Evolution teaches the universe is billions of years old.
The Bible teaches the universe is about 6,000 years old.

Evolution teaches stars evolved into existence by natural processes.
The Bible teaches that God created the stars.

2. Theistic evolution teaches that God used the big bang as part of His creation. The Bible teaches God spoke a mature universe into existence out of nothing.

Theistic evolution teaches the universe is billions of years old.
The Bible teaches the universe is about 6,000 years old.

Theistic evolution teaches stars evolved into existence by natural processes.
The Bible teaches that God created the stars.

3.

- God's creation was not in 6 literal days.
- The meaning of "very good" in Genesis 1:31 includes death and decay.
- There would have been death before sin.
- The Genesis Flood would have been a local flood and not worldwide.
- The Bible is wrong in Colossians 1:16 where it declares that God made "all things".

4.

- a. Recession of the moon: The moon is receding from the earth at about 2 inches a year. If this is extrapolated back to 1.4 billion years, the moon would be in contact with the earth. This means the moon cannot be 4.6 billion years old if it came from the earth.
- b. The age of the sun: The sun grows brighter with age. If we go back to the time when evolutionists claim life originated there is a problem. According to evolutionists, heat is necessary for life to get started, but 3.5 billion years ago the sun would be about 25% less bright. This means the average temperature on earth would have been below freezing when life supposedly arose.
- c. Short or long period comets: Comets are big, dirty ice cubes. Every time they circle around the sun they lose some of their mass. If the solar system is 4.6 billion years old, all comets should have burned up. There

should be no comets. However, we still observe many comets. The claim by evolutionists is that short period comets are fed from the Kuyper belt and the long period comets from the Oort cloud. The problem with the Oort cloud is that it has never been observed. It is strictly a speculation based on a belief in evolution (long ages). While there have been objects observed in the Kuyper belt they are all too large to be comets. This means the evolutionists are without a valid explanation for the continued existence of comets. The data supports a young solar system.

- d. Supernova Remnants: A supernova is the left over gas and dust cloud from an exploding star. If the universe is 13 or more billion years old, there should be thousands of supernova remnants that have had sufficient time to expand to great distances. Current observations have been unable to detect any such expanded supernova remnants. This is good evidence that the universe is not old.

5. The Bible states clearly that God made the stars and that they did not evolve into existence by natural processes.

Genesis 1:6, Isaiah 40:26, Psalms 8:3, Exodus 20:11, Psalm 19:1
Psalm 33:6, Psalm 148:5, Isaiah 45:12, Nehemiah 9:6, John 1:1-3
Revelation 4:11

Note: While it is theoretically possible for a star to form by natural processes, it has never been observed.

6. Gas and dust clouds begin to rotate and eventually collapse inward due to gravitational pull to form a star.
7. The problem with the evolution model for star formation is that when a gas and dust cloud begins to collapse inward it will also generate heat pressure. This heat will be stronger than the gravitational pull inward and will cause the cloud to expand outward.
8. When bright spots are observed in alleged star nurseries they have been measured to be much too hot to condense inward (10,000 Kelvin). In some cases bright spots have been observed recently that were not there before. This could be because the cloud is expanding and stars that were always there are now visible through the cloud. The claim of stars being formed in large clouds' "star nurseries" cannot be confirmed.
9. 31,700
10. Redshift of starlight, Cosmic Background Radiation, element abundances

11. Redshift of starlight, Cosmic Background Radiation, galaxy formation, spiral galaxies, supernova remnants, distribution of galaxies, the laws of thermodynamics, medium and heavy elements, star formation
12. “Fifteen to twenty billion years ago a big bang, or explosion, occurred, creating the universe. The universe began as an infinitely dense, hot fireball, a scrambling of space and time.” The big bang is an expansion of space and time.
13. The universe has no center.
14. Redshifts are used to describe the expansion of the universe – the distance of a galaxy from the earth due to the stretching of the light waves.
15. Diagram “b” is what we should observe based on the big bang because it represents a homogeneous looking universe.
16. Diagram “a” is what we should observe based on the big bang because it represents a series of distinct quanta (intervals).
17. The Copernican Principle proposes that the universe has no center. There is no preferred (special) place in the universe.
18. The big bang predicts a homogeneous universe meaning a continuous line of redshifts. The actual observed data contradicts this prediction. We observe distinct one-million light-year intervals of redshifts. They appear as concentric circles around our galaxy. This contradicts the Copernican Principle. The only known way this could be observed is that our galaxy is near the center of the observable universe. Since the big bang is based on the Copernican Principle (no special place or center) the observed data also contradicts the big bang.
19. Day with a number
The phrase “Evening and morning” with each day
Genesis 1:14 defines a day as different than a season or year
Exodus 20:11
Words used to indicate time
Sentence structure
Genealogies in Genesis chapter 5
Plants and sunlight
The sun
The plain reading of the text
(Note: for complete descriptions, see the book “It Matters What We Believe” at www.train2equip.com)
20. 2 Timothy 4:3-4

Exercise
Astronomy and the Bible (multiple choice/ fill-in format)
Answer Key

1.

	Origin of the universe	Age of the universe	Origin of stars
Evolution	Out of nothing	13-15 billion years	By natural processes
Theistic evolution	God created the original matter and used the big bang	13 – 15 billion years	By natural processes
Bible	God spoke the universe into existence	About 6,000 years	God created the stars on day 4 of the creation week

2. a, b, d

3. c

4. a

5. c

6. c

7. a

8. b

9. c

10. b

11. b

12. b

13. b

14. b

15. heat pressure

16. b

17. d

18. The redshift of starlight, Cosmic Background Radiation, element abundances, education system

19. The redshift of starlight, Cosmic Background Radiation, galaxy formation, spiral galaxies, super nova remnants, 1st and 2nd laws of thermodynamics, medium and heavy elements

20. b

21. a, b, c, d

- 22. d
- 23. a, b, c
- 24. b
- 25. b, d
- 26. c
- 27. c
- 28. b
- 29. a
- 30. a, b, c
- 31. a
- 32. a, b, c
- 33. c