**EBD Ciência e Fé**

Aula Treze

**Extras**

# O Dia Perdido de Josué

* Josué 10:8-14
* Esse é uma das passagens de interpretação científica mais complexa no velho testamento.
* Observe que os amorreus eram adoradores do Sol e da Lua, de forma que ver os seus deuses obedecerem ao Deus de Israel de ter sido humilhante. Esse também teria sido o motivo principal deste milagre
* Primeiro, não existe a história sobre a NASA, confirmando a falta do dia através de análises de computadores.
  + [Have NASA Computers Proved Joshua’s Long Day? | Answers in Genesis](https://answersingenesis.org/creationism/arguments-to-avoid/have-nasa-computers-proved-joshuas-long-day/)
* Possibilidades
  + Alguns dizem que não houve realmente um milagre, mas apenas o uso de linguagem poética. Os israelitas lutaram tão fortemente que consideram como se fossem 2 dias
    - Difícil aceitar o uso de linguagem poética em um livro histórico
    - O texto diz claramente que o sol parou
  + Outros propões que uma nuvem cobriu o sol, mantendo o dia fresco o suficiente para que eles continuassem lutando até a noite.
    - Mas nesse caso isso teria beneficiado também os seus inimigos
  + Um eclipse poderia ter reduzido a luz do sol,
    - porém eclipses duram apenas alguns minutos, e não um dia inteiro
  + Todos esses argumentos caem sob Josué 10:14
  + Aparentemente seria meio-dia ou o período da tarde (o sol parou no meio do ceu), e o autor está dizendo que o sol não continuou para finalizar o dia.
  + Outras culturas tem lendas baseadas nesse evento:
    - O mito do filho de Apolo, que mudou o curso do sol por um dia.
    - Culturas em outros lugares da terra tem historias semelhantes
      * Os maoris da Nova Zelandia tem uma historia sobre um heroi que não deixa com que o sol se por.
      * Os indios mexicanos de Cuatitlan contam sobre uma noite que durou mais que o normal.
  + Alguma forma de refração da duz do sol e da lua. De acordo com esse visão, Deus fez com que a luz do Sol e da Lua continuassem sobre Canaã por aproximadamente um dia
    - O que Josué precisava era da luz do Sol, e não que a Terra parasse de rodar
    - Deus prometeu a Noé (Gn 8:22) que continuaria havendo dia e noite.
      * Porém isso não significa que a Terra não poderia rodar muito mais devagar.
  + Uma alteração no eixo de rotação da Terra
    - O eixo de rotação poderia ter se deslocado de forma a que para os observadores naquele local o sol e a lua estaria parados no céu. Com isso o movimento de rotação continuaria.
    - Um motivo seria que a orbita da Terra e de Marte estariam muito próximos naquela data. Por outro lado não há nenhuma evidência de que isso aconteceu e isso traria consequencias muito maiores, como queda de asteróides.
  + Uma redução na velocidade de rotação da Terra
    - De acordo com essa visão, Deus reduziu a velocidade de rotação da Terra de forma a que um dia tenha durado 48 horas e não apenas 24. Da mesma forma Deus teria agido para evitar os efeitos que naturalmente teriam ocorrido, como ondas gigantes.
    - A queda da velocidade poderia ter sido gradual, de forma a não gerar um impacto sobre as pessoas e construções.
      * Placas tectonicas, oceanos, atmosfera (rodamos a 1600km/h no Equador)
    - Ao final desse período, a Terra teria voltado a girar normalmente.

# A sombra e o rei Ezequias

* 2 Reis 20:9-11, Is 38:8
* Evento local? 2 Cr 32:31
* O Sol retornou “dez graus”
  + Podem ser “dez marcas” no relógio de Sol de Acaz
  + Podem ser “dez degraus” na escada de algum monumento
* Existe a possibilidade de que tenha havido um eclipse solar neste dia

# Argumentos que criacionistas não devem usar

## “Darwin recanted on his deathbed.”

Many people use this story; however, it is almost certainly not true, and there is no corroboration from those who were closest to him—even from Darwin’s wife Emma, who never liked evolutionary ideas. Also, even if it were true, so what? If Ken Ham renounced the Bible, would that disprove it? See Did Darwin recant? and Did Darwin Renounce Evolution on His Deathbed?

## “Moon-dust thickness proves a young moon.”

*For a long time, creationists claimed that the dust layer on the moon was too thin if dust had truly been falling on it for billions of years. They based this claim on early estimates—by evolutionists—of the influx of moon dust, and worries that the moon landers would sink into this dust layer. But these early estimates were wrong, and by the time of the Apollo landings, NASA was not worried about sinking. So the dust layer thickness can’t be used as proof of a young moon (or of an old one, either). See Moon-dust argument no longer useful and Moon dust and the age of the solar system (Technical).*

## “NASA computers, in calculating the positions of planets, found a missing day and 40 minutes, proving Joshua’s “long day” [Joshua 10] and Hezekiah’s sundial movement [2 Kings 20].”

Though this story is not promoted by major creationist organizations, it is a hoax in wide circulation, especially on the internet.

Essentially the same story appeared in the somewhat unreliable 1936 book The Harmony of Science and Scripture by Harry Rimmer. Evidently an unknown person embellished it with modern organization names and modern calculating devices.

Also, the whole story is mathematically impossible—it requires a fixed reference point before Joshua’s long day. In fact, we would need to cross-check between both astronomical and historical records to detect any missing day. And to detect a missing 40 minutes requires that these reference points be known to within an accuracy of a few minutes. It is certainly true that the timing of solar eclipses observable from a certain location can be known precisely. But the ancient records did not record time that precisely, so the required cross-check is simply not possible. Furthermore, the earliest historically recorded eclipse occurred in 1217 BC, nearly two centuries after Joshua. So there is no way the missing day could be detected by any computer. See also Has NASA Discovered a “Missing Day”? for historical and scientific documentation that this alleged discovery is mythological.

(Note that discrediting this myth doesn’t mean that the events of Joshua 10 didn’t happen. Features in the account support its reliability—for example, that the moon was also slowed down. This was not necessary to prolong the day, but this would be observed from Earth’s reference frame if God had accomplished this miracle by slowing Earth’s rotation. See Joshua’s long day.)

## “Woolly mammoths were flash frozen during the Flood catastrophe.”

*This is contradicted by the geological setting in which mammoths are found. It’s most likely that they perished toward the end of the Ice Age, possibly in catastrophic dust storms. Partially digested stomach contents are not proof of a flash freeze, because the elephant’s stomach functions as a holding area—a mastodon with preserved stomach contents was found in the western USA, where the ground was not frozen. See also The extinction of the woolly mammoth: was it a quick freeze?*

### “*The Castenedolo and Calaveras human remains in ‘old’ strata invalidate the geologic column.”*

*These are not sound examples—the Castenedolo skeletal material shows evidence of being an intrusive burial, that is, a recent burial into older strata, since all the fossils apart from the human ones had time to be impregnated with salt. The Calaveras skull was probably a hoax planted into a mine by miners. For the current AiG view on human fossil stratigraphy, see Where are all the human fossils? from the Answers Book.*

### *“Dubois renounced Java man as a ‘missing link’ and claimed it was just a giant gibbon.”*

*Evolutionary anthropology textbooks claimed this, and creationists followed suit. However, this actually misunderstood Dubois, as Stephen Jay Gould has shown. It’s true that Dubois claimed that Java man (which he called Pithecanthropus erectus) had the proportions of a gibbon. But Dubois had an eccentric view of evolution (universally discounted today) that demanded a precise correlation between brain size and body weight. Dubois’ claim about Java man actually contradicted the reconstructed evidence of its likely body mass. But it was necessary for Dubois’ idiosyncratic proposal that the alleged transitional sequence leading to man fit into a mathematical series. So Dubois’ gibbon claim was designed to reinforce its “missing link” status. See Who was ‘Java man’?*

### *“The Japanese trawler Zuiyo Maru caught a dead plesiosaur near New Zealand.”*

*This carcass was almost certainly a rotting basking shark, since their gills and jaws rot rapidly and fall off, leaving the typical small “neck” with the head. This has been shown by similar specimens washed up on beaches. Also, detailed anatomical and biochemical studies of the Zuiyo-maru carcass show that it could not have been a plesiosaur. See Live plesiosaurs: weighing the evidence and Letting rotting sharks lie.*

## “The 2nd Law of Thermodynamics began at the Fall.”

This law says that the entropy (“disorder”) of the universe increases over time, and some have thought that this was the result of the Curse. However, disorder isn’t always harmful. An obvious example is digestion, breaking down large complex food molecules into their simple building blocks. Another is friction, which turns ordered mechanical energy into disordered heat—otherwise Adam and Eve would have slipped as they walked with God in Eden! A less obvious example to laymen might be the sun heating the earth—to a physical chemist, heat transfer from a hot object to a cold one is the classic case of the Second Law in action. Also, breathing is based on another classic Second Law process, gas moving from a high pressure to low pressure. Finally, all beneficial processes in the world, including the development from embryo to adult, increase the overall disorder of the universe, showing that the Second Law is not inherently a curse.

Death and suffering of nephesh animals before sin are contrary to the biblical framework above, as is suffering (or “groaning in travail” [Rom. 8:20–22]). It is more likely that God withdrew some of His sustaining power (Col. 1:15–17) at the Fall so that the decay effect of the Second Law was no longer countered. See Did the 2nd Law begin at the Fall?

### “If we evolved from apes, apes shouldn’t exist today.”

In response to this statement, some evolutionists point out that they don’t believe that we descended from apes, but that apes and humans share a common ancestor. However, the evolutionary paleontologist G.G. Simpson had no time for this “pussyfooting,” as he called it. He said, “In fact, that earlier ancestor would certainly be called an ape or monkey in popular speech by anyone who saw it. Since the terms ape and monkey are defined by popular usage, man’s ancestors were apes or monkeys (or successively both). It is pusillanimous [mean-spirited] if not dishonest for an informed investigator to say otherwise.”

However, the main point against this statement is that many evolutionists believe that a small group of creatures split off from the main group and became reproductively isolated from the main large population, and that most change happened in the small group which can lead to allopatric speciation (a geographically isolated population forming a new species). So there’s nothing in evolutionary theory that requires the main group to become extinct.

It’s important to note that allopatric speciation is not the sole property of evolutionists—creationists believe that most human variation occurred after small groups became isolated (but not speciated) at Babel, while Adam and Eve probably had mid-brown skin color. The quoted erroneous statement is analogous to saying “If all people groups came from Adam and Eve, then why are mid-brown people still alive today?”

So what’s the difference between the creationist explanation of people groups (“races”) and the evolutionist explanation of people origins? Answer: the former involves separation of already-existing information and loss of information through mutations; the latter requires the generation of tens of millions of “letters” of new information.

### “Women have one more rib than men.”

AiG has long pointed out the fallacy of this statement, which seems to be more popular with dishonest skeptics who want to caricature creation. The removal of a rib would not affect the genetic instructions passed on to the offspring, just as a man who loses a finger wouldn’t have sons with nine fingers. Any skeptic who tries to discredit the Bible with this argument must be a closet Lamarckian, i.e., one who believes Lamarck’s thoroughly discredited idea of inheritance of acquired characteristics! Note also that Adam wouldn’t have had a permanent defect, because the rib is the one bone that can regrow if the surrounding membrane (periosteum) is left intact.

### *“Archaeopteryx is a fraud.”*

*Archaeopteryx was genuine (unlike Archaeoraptor, a “Piltdown bird”), as shown by anatomical studies and close analysis of the fossil slab. It was a true bird, not a “missing link.” See Q&A: Dinosaurs.*

### “There are no beneficial mutations.”

This is not true, since some changes do confer an advantage in some situations. Rather, we should say, “We have yet to find a mutation that increases genetic information, even in those rare instances where the mutation confers an advantage.” For examples of information loss being advantageous, see Q&A: Mutations

## “No new species have been produced.”

This is not true—new species have been observed to form. In fact, rapid speciation is an important part of the creation model. But this speciation is within the “kind,” and involves no new genetic information. See Q&A: Speciation.

## “Earth’s axis was vertical before the Flood.”

There is no basis for this claim. Seasons are mentioned in Genesis 1:14 before the Flood, which strongly suggests an axial tilt from the beginning. Some creationists believe that a change in axial tilt (but not from the vertical) started Noah’s Flood. But a lot more evidence is needed and this idea should be regarded as speculative for now. Furthermore, computer modeling suggests that an upright axis would make temperature differences between the poles and equator far more extreme than now, while the current tilt of 23.5° is ideal. The moon has an important function in stabilizing this tilt, and the moon’s large relative size and the fact that its orbital plane is close to the earth’s (unlike most moons in our solar system) are design features.

### *“Paluxy tracks prove that humans and dinosaurs co-existed.”*

*Some prominent creationist promoters of these tracks have long since withdrawn their support. Some of the allegedly human tracks may be artifacts of erosion of dinosaur tracks obscuring the claw marks. There is a need for properly documented research on the tracks before we would use them to argue the coexistence of humans and dinosaurs. However, there is much other evidence that dinosaurs and humans coexisted—see Q&A: Dinosaurs.*

### “Darwin mentioned the absurdity of eye evolution in The Origin of Species.”

Citing his statement at face value is subtly out of context. Darwin was talking about its seeming absurdity but then said that after all it was quite easy to imagine that the eye could be built step-by-step (in his opinion, with which AiG obviously disagrees—see Darwin vs. The Eye and An eye for creation).

### “Earth’s division in the days of Peleg (Gen. 10:25) refers to catastrophic splitting of the continents.”

Commentators both before and after Lyell and Darwin (including Calvin, Keil and Delitzsch, and Leupold) are almost unanimous that this passage refers to linguistic division at Babel and subsequent territorial division. We should always interpret Scripture with Scripture, and there’s nothing else in Scripture to indicate that this referred to continental division. But only eight verses on (note that chapter and verse divisions were not inspired), the Bible states, “Now the whole earth had one language and one speech” (Gen. 11:1), and as a result of their disobedience, “the LORD confused the language of all the earth” (Gen. 11:9). This conclusively proves that the “earth” that was divided was the same earth that spoke only one language, i.e., “earth” refers in this context to the people of the earth, not planet Earth.

Another major problem is the scientific consequences of such splitting—another global flood! This gives us the clue as to when the continents did move apart: during Noah’s Flood. See also comments on plate tectonics below.

### *“The Septuagint records the correct Genesis chronology.”*

*This is not so. The Septuagint chronologies are demonstrably inflated, and contain the (obvious) error that Methuselah lived 17 years after the Flood. The Masoretic Text (on which almost all English translations are based) preserves the correct chronology. See Some remarks preliminary to a biblical chronology.*

### *“There are gaps in the genealogies of Genesis 5 and 11, so the earth may be 10,000 years old or even more.”*

*This is not so. The language is clear that they are strict chronologies, especially because they give the age of the father at the birth of the next name in line. So the earth is only about 6,000 years old. See Biblical genealogies for exegetical proof.*

### *“Jesus cannot have inherited genetic material from Mary, otherwise He would have inherited original sin.”*

*This is not stated in Scripture and even contradicts important points. The language of the NT indicates physical descent, which must be true for Jesus to have fulfilled the prophecies that He would be a descendant of Abraham, Jacob, Judah and David. Also, the Protevangelium of Gen. 3:15, regarded as Messianic by both early Christians and the Jewish Targums, refers to “the seed of the woman.” This is supported by Gal. 4:4, “God sent forth His Son, coming (genomenon) from a woman.” Most importantly, for Jesus to have died for our sins, Jesus, the “last Adam” (1 Cor. 15:45), had to share in our humanity (Heb. 2:14), so must have been our relative via common descent from the first Adam as Luke 3:38 says. In fact, seven centuries before His Incarnation, the prophet Isaiah spoke of Him as literally the “Kinsman-Redeemer,” i.e., one who is related by blood to those he redeems (Isaiah 59:20 uses the same Hebrew word goel as used to describe Boaz in relation to Ruth). To answer the concern about original sin, the Holy Spirit overshadowed Mary (Luke 1:35), preventing any sin nature from being transmitted.*

## “The phrase ‘science falsely so called’ in 1 Timothy 6:20 (KJV) refers to evolution.”

To develop a scriptural model properly, we must understand what the author intended to communicate to his intended audience, which in turn is determined by the grammar and historical context. We must not try to read into Scripture that which appears to support a particular viewpoint. The original Greek word translated “science” is gnosis, and in this context refers to the elite esoteric “knowledge” that was the key to the mystery religions, which later developed into the heresy of Gnosticism. This was not an error by the KJV translators, but an illustration of how many words have changed their meanings over time. The word “science” originally meant “knowledge,” from the Latin scientia, from scio, meaning “to know.” This original meaning is just not the way it is used today, so modern translations correctly render the word as “knowledge” in this passage.

Of course AiG believes that evolution is anti-knowledge because it clouds the minds of many to the abundant evidence of God’s action in creation and the true knowledge available in His Word, the Bible. But as this page points out, it is wrong to use fallacious arguments to support a true viewpoint. On a related matter, it is linguistically fallacious to claim that even now, “science really means knowledge,” because meaning is determined by usage, not derivation (etymology).

### *“Geocentrism (in the classical sense of taking the earth as an absolute reference frame) is taught by Scripture and heliocentrism is anti-scriptural.”*

*AiG rejects this dogmatic geocentrism, and believes that the biblical passages about sunset and sunrise, etc., should be understood as taking the earth as a reference frame, but that this is one of many physically valid reference frames; the center of mass of the solar system is also a valid reference frame. See Q&A: Geocentrism and Geocentrism and Creation.*

### *“Ron Wyatt has found much archeological proof of the Bible.”*

*There is not the slightest substantiation for Wyatt’s claims, just excuses to explain away why the evidence is missing. See Has the Ark of the Covenant been found?*

### *Some of Carl Baugh’s “evidences” for creation.*

*We are sorry to say that, while AiG thinks he’s well meaning, Baugh unfortunately uses a lot of material that is not sound scientifically. So we advise against relying on any “evidence” he provides unless supported by creationist organizations with reputations for biblical and scientific rigor. Unfortunately, there are talented creationist speakers with reasonably orthodox understandings of Genesis who continue to promote some of the Wyatt and Baugh “evidences” despite being approached on the matter.*

### *“Missing solar neutrinos prove that the sun shines by gravitational collapse, thereby proving a young sun.”*

*This is about a formerly vexing problem of detecting only one-third of the predicted number of neutrinos from the sun. Also, accepted theories of particle physics said that the neutrino had zero rest mass, which would prohibit oscillations from one “flavor” to another. Therefore, consistent with the data then available, some creationists proposed that the sun was powered one-third by fusion and two-thirds by gravitational collapse. This would have limited its age to far less than 4.5 billion years.*

*However, a new experiment was able to detect the “missing” flavors and seems to provide conclusive evidence for oscillation. This means that neutrinos must have a very tiny rest mass after all (since experimental data takes precedence over theory). Therefore creationists should no longer invoke the missing neutrino problem to deny that fusion is the primary source of energy for the sun. It cannot be used as a young-age indicator—nor an old-age indicator, either.*

### *“Einstein held unswervingly, against enormous peer pressure, to belief in a Creator.”*

*Using the normal meaning of these terms, Einstein believed no such thing. See also Physicists’ God-talk.*

What arguments are **doubtful**, hence, inadvisable to use?

### Canopy theory.

This is not a direct teaching of Scripture, so there is no place for dogmatism. Also, no suitable model has been developed that holds sufficient water, but some creationists suggest a partial canopy may have been present. For AiG’s current opinion, see Noah’s Flood—what about all that water? from the Answers Book.

### “There was no rain before the Flood.”

This is not a direct teaching of Scripture, so again there should be no dogmatism. Genesis 2:5–6 at face value teaches only that there was no rain at the time Adam was created. But it doesn’t rule out rain at any later time before the Flood, as great pre-uniformitarian commentators such as John Calvin pointed out. A related fallacy is that the rainbow covenant of Genesis 9:12–17 proves that there were no rainbows before the Flood. As Calvin pointed out, God frequently invested existing things with new meanings, e.g., the bread and wine at the Lord’s Supper.

### *“Natural selection is a tautology.”*

*Natural selection is in one sense a tautology. Who are the fittest? Those who survive and leave the most offspring. Who survive and leave the most offspring? The fittest. But a lot of this is semantic wordplay, and depends on how the matter is defined, and for what purpose the definition is raised. There are many areas of life in which circularity and truth go hand in hand. For example, what is electric charge? That quality of matter on which an electric field acts. What is an electric field? A region in space that exerts a force on electric charge. But no one would claim that the theory of electricity is thereby invalid and can’t explain how motors work; it is only that circularity cannot be used as independent proof of something. To harp on the issue of tautology can become misleading, if the impression is given that something tautological therefore doesn’t happen. Of course the environment can “select,” just as human breeders select. But demonstrating this doesn’t mean that fish could turn into philosophers by this means. The real issue is the nature of the variation, the information problem. Arguments about tautology distract attention from one of the real weaknesses of neo-Darwinism—the source of the new information required. Given an appropriate source of variation (for example, an abundance of created genetic information with the capacity for Mendelian recombination), replicating populations of organisms would be expected to be capable of some adaptation to a given environment, and this has been demonstrated amply in practice.*

*Natural selection is also a useful explanatory tool in creationist modeling of post-Flood radiation with speciation (see Q&A: Natural Selection).*

### *“Evolution is just a theory.”*

*What people usually mean when they say this is “Evolution is not proven fact, so it should not be promoted dogmatically.” Therefore people should say that! The problem with using the word “theory” in this case is that scientists use it to mean a well-substantiated explanation of data. This includes well-known theories such as Einstein’s Theory of Relativity and Newton’s Theory of Gravity, as well as lesser-known ones such as the Debye–Hückel Theory of electrolyte solutions. It would be better to say that particles-to-people evolution is an unsubstantiated hypothesis or conjecture.*

### “There is amazing modern scientific insight in the Bible.”

We should interpret the Bible as the author originally intended, and as the intended readership would have understood it. Therefore we should be cautious in reading modern science into passages if the original readers would not have seen it. This applies especially to poetic books like Job and Psalms. For example, Job’s readers would not have understood Job 38:31 to be teaching anything about the gravitational potential energy of Orion and Pleiades. Rather, the original readers would have seen it as a poetic illustration of God’s might—that God, unlike Job, could create the Pleiades in a tightly-knit cluster, which is what it looks like, while God created Orion as a well spread-out constellation, again something well beyond Job’s ability. Similarly, Job 38:14 is not advanced scientific insight into the earth’s rotation, because the earth is not being compared to the turning seal, but to the clay turning from one shape into another under the seal.

### “The speed of light has decreased over time.”

Although most of the evolutionary counter-arguments to this idea, known formally as c-decay, have been proven to be fallacious, there are still a number of problems with it (many raised by creationists). AiG currently prefers Dr. Russell Humphreys’ explanation for distant starlight, although neither AiG nor Dr. Humphreys claim that his model is infallible. See How can we see distant stars in a young universe? from the Answers Book.

### “There are no transitional forms.”

Since there are candidates, even though they are highly dubious, it’s better to avoid possible comebacks by saying instead: “While Darwin predicted that the fossil record would show numerous transitional fossils, even a century and a half later, all we have are a handful of disputable examples.” See Q&A: Fossils.

### *“Gold chains have been found in coal.”*

*Several artifacts, including gold objects, have been documented as having been found within coal, but in each case the coal is no longer associated with the artefact. The evidence is therefore strictly anecdotal (e.g., “This object was left behind in the fireplace after a lump of coal was burned”). This does not have the same evidential value as having a specimen with the coal and the artifact still associated.*

### *“Plate tectonics is fallacious.”*

*AiG believes that Dr. John Baumgardner’s work on catastrophic plate tectonics provides a good explanation of continental shifts and the Flood. See Q&A: Plate Tectonics. However, AiG recognizes that some reputable creation scientists disagree with plate tectonics.*

### “Creationists believe in microevolution but not macroevolution.”

These terms, which focus on “small” vs. “large” changes, distract from the key issue of information. That is, particles-to-people evolution requires changes that increase genetic information, but all we observe is sorting and loss of information. We have yet to see even a “micro” increase in information, although such changes should be frequent if evolution were true. Conversely, we do observe quite “macro” changes that involve no new information, e.g., when a control gene is switched on or off.

### *“The gospel is in the stars.”*

*Though this is an interesting idea, it is quite speculative, and many biblical creationists doubt that it is taught in Scripture. Therefore, we do not recommend using it.*