

## Australian Skeptics vs AiG–Australia

*Australia's largest metropolitan newspaper, the Sydney Morning Herald, is hosting this debate on its website*

15 June 2005

AiG–Australia accepted an invitation for a written 'mini-debate' with the Australian Skeptics on the *Sydney Morning Herald* (SMH) weblog of Margo Kingston (a well-known Australian journalist) which began in June. This was an exciting opportunity to get the message out to many thousands of secular folk. To see feedback to this website from this debate, visit our [feedback page](#) posted July 1.

### **Topic: Did the universe and life evolve, or was it specially created in 6 days?**

The format includes three essays each up to 1500 words:

- [13 June—Opening essay](#)
- [16 June—Second essay \(rebuttal and/or new material\)](#)
- [19 June—Final essay \(rebuttal, summary, etc.\)](#)

The debate generated unprecedented interest; normally a few dozen comments are posted on this popular secular media site in response to issues and articles, but hundreds and hundreds of people have posted reactions to this exchange. They include testimony from a former skeptic, and also from an uncommitted person searching for answers, who says that the science debate was won 'hands down' by the creationist team. The link to the site is [webdiary.smh.com.au/index.html](http://webdiary.smh.com.au/index.html).

Praise God for this opportunity to assist in 'demolish[ing] arguments and every pretension that sets itself up against the knowledge of God' (2 Cor. 10:5), and for answered prayers for wisdom for our team ([Don Batten](#), [Jonathan Sarfati](#), [Tasman Walker](#), [Carl Wieland](#)).

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# The origin of the species: opening statements in the debate

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Commentary by Phil Uebergang  
June 13, 2005 01:00 PM

*Phil Uebergang is Webdiary's beliefs columnist. He previewed the debate at [Creation or evolution: a Webdiary debate coming soon](#).*

What do you know about human origins and the history of the universe? What do you understand about evolution? Against a backdrop of overwhelming scientific opposition, is there a case for special creation and a 'young' earth as the Bible proclaims?

Until the beginning of the last century, Biblical creation was the orthodoxy of science in the western world. Although evolutionary theory existed before Charles Darwin's time, it was very basic and poorly received. Not until Darwin's work on biological adaptation and the publication of his now famous dissertation on origins, in combination with other scientific theory such as uniformitarianism, did evolution start to gain a firm foothold in scientific circles. It has since become the dominant scientific theory on origins, and is generally accepted by both laymen and scientists as the true framework of natural history.

Yet there is a small but noticeable voice among scientists which rejects the theory of evolution, claiming that the physical evidence to support it is not there. Some even go so far as to claim that the evidence points to an earth much younger than the eons required by evolution. Are their arguments valid?

A group of Australia's most prominent scientific thinkers on the issue of origins have generously given up their time to debate their respective stances in Webdiary over the next week.

Does it matter to us? The contention that this issue is 'not worth debating these days' is to suggest that anything we accept as truth must not be argued, which is an unenlightened attitude. Besides which, the question of who we are and where we come from should always be approached with a healthy curiosity, in an attempt to improve our knowledge of ourselves and perhaps improve our condition as humans.

Debating is not so much about convincing others of your arguments as it is about opening up discussion and thought processes. Most importantly, it's about having a bit of intellectual fun. Accordingly I invite everyone to participate in a spirit of good will and honesty.

The question for debate is: ***'Did the universe and life evolve, or was it specially created in 6 days?'***

Each argument is limited to 1,500 words, with the third and final arguments to be rebuttals. All arguments are prepared unseen by the opposing side. The 'second speaker' arguments will be posted on Thursday, and the third arguments on Sunday. Enjoy!

### **To argue the case for creation**

[Answers in Genesis](#) is a non-denominational ministry which seeks to support the Christian church in upholding biblical authority, especially in the field of origins/Genesis. Questions arising from this debate should be directed to [Q@answersingenesis.com](mailto:Q@answersingenesis.com). The AiG scientific team for the debate consists of the following:

[Don Batten](#) has a Ph.D. in plant physiology from the University of Sydney and has worked as a research scientist for 20 years. He has published peer-reviewed scientific papers in the secular literature, as well as in technical creationist journals. Don co-wrote and edited the best-selling *The Answers Book*. He currently works full-time for Answers in Genesis in Brisbane, Australia as a speaker, writer and consultant scientist.

[Jonathan Sarfati](#) has a Ph.D. in physical chemistry from Victoria University of Wellington (New Zealand), and has published papers on high-temperature superconductors and selenium-containing ring and cage-shaped molecules. One of his books, *Refuting Evolution*, has over 400,000 in print. A former New Zealand national chess champion, he currently works full-time for Answers in Genesis in Brisbane, Australia as a speaker, writer and consultant scientist.

[Tasman Walker](#) has a B.Sc. (Hons.) majoring in Earth Science, a B.Eng. (Hons) and a Ph.D. in engineering from the University of Queensland. He has an extensive background in planning, design and operation of power stations, as well as geological assessments of coalmines for new fuel supplies and operational monitoring. He currently works full-time for Answers in Genesis in Brisbane, Australia as a speaker, writer and consultant geologist.

[Carl Wieland](#) has degrees in medicine and surgery from Adelaide University. In 1978 he founded *Creation* magazine, which now has subscribers in over 140 countries. He has authored and co-authored many articles in creationist publications, and several books. A former medical practitioner, he has since 1987 worked fulltime for Answers in Genesis, Australia, of which he is currently CEO.

### **To argue the case for evolution**

[The Australian Skeptics](#) "is a group that investigates the paranormal and pseudo-science from a responsible scientific [viewpoint](#)". Many scientists are members or friends of the Skeptics, three of whom have shown particular enthusiasm to take part in this debate.

[Dr Paul Willis](#) is from ABC television. Dr Willis' ABC web site biography states that he got into science as a kid and has never grown out of it. "He found his first fossil when he was a six-year-old pom and has been hooked on Palaeontology ever since. Moving to Australia at the age of nine, Paul went on to study Geology and Zoology at

Sydney University before completing a PhD at the University of New South Wales studying fossil crocodiles. Paul has been with the ABC since 1997 as a cross media science broadcaster, regularly appearing on radio, TV and online."

"[Dr Alex Ritchie](#) was born in Scotland and studied geology at Edinburgh University (1955-59), gaining his BSc (Hons) in Geology. He also carried out research on early fossil fishes, for which he was awarded a PhD in 1963. He lectured in Geology at Edinburgh University (1960-63) and Sheffield University (1963-67) before joining the Australian Museum in 1968 as its Curator of Fossils. Dr Ritchie was the Palaeontologist at the Australian Museum from 1968 until he retired in late 1995. On his retirement the Australian Museum Trust awarded him a Research Fellowship, an honorary position enabling him to continue active palaeontological research based at the Australian Museum, with full access to its facilities and resources."

[Dr Ken Smith](#) is from the University of Queensland: "I am an Honorary Research Consultant in the Department of Mathematics, The University of Queensland. Since retiring from full-time lecturing in January 1997 I have been working, also in an honorary capacity, in the Chaplaincy Services at The University of Queensland."

[Peter Bowditch](#) writes: "My job is to collate and edit the comments of these and other scientists. I am not a working scientist myself, (I am a computer consultant and my academic background is in psychology and epistemology). In my spare time I am Vice President of Australian Skeptics and I run a web site at [ratbags.com](http://ratbags.com) which addresses the problem of uncritical thinking."

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**(Teams, Webdiarists, ladies and gentlemen:** please accept Webdiary's apologies for the technical difficulties. In particular we urge all interested parties to reconsider the 'Answers in Genesis' opening case with the hyperlinks fully functioning. Thank you for your patience.)

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The Question has been put:

**‘Did the universe and life evolve, or was it specially created in 6 days?’**

### **Answers in Genesis, First Speaker**

Schools, universities, and the media assert that all life is the result of billions of years of evolution - i.e., no Creator was involved or necessary. Creationists who take [Genesis as Jesus Christ did](#), i.e. literal history, and claim the universe was created in [six days](#) around [6,000 years ago](#), are derisively dismissed as being (at the very least) stupid; or unthinking; or blindly ignoring facts. But this doesn't stand up in the light of the many [highly-qualified creationists awarded PhDs](#) and other science-based degrees from highly-regarded universities. Their views on the origin of life, age of the earth, etc., are usually dismissively (and often emotively) ridiculed *without* careful consideration. So we appreciate this opportunity to at least present a brief case.

## A very different starting point

The idea that science is just a bunch of facts that speak for themselves is not taken seriously anymore by modern philosophers of science. Facts always have to be interpreted within a framework ([paradigm](#)), which is built upon starting assumptions (unprovable beliefs). Because the past is not accessible to direct observation or experiment, historical science (e.g. paleontology) is severely limited compared to [operational \(experimental\) science](#) which has given science its deserved reputation for public benefit in e.g. transport, communication, health, etc. Both creationists and evolutionists have the same facts (though unfortunately it is always possible for inconvenient ones to be ignored), but different assumptions.

Today's dominant paradigm is built upon the unstated assumption that any action by the miracle-working Creator God of the Bible must be excluded from even the definition of science, [regardless how the facts might fit](#) (that would have been news to the creationist founders of modern science, like Newton). Modern historical geology was built on [philosophical assumptions](#) which excluded the biblical notion of a recent global watery catastrophe - by definition, rather than observation.

Aware of the impossibility of knowing the past with certainty without an eyewitness historical account - which is what the Bible claims to be - a Bible-believing scientist starts with an alternative set of beliefs. They would argue that if you start from the assumption that our Creator really has spoken through His prophets ([Hebrews 1:1](#); [2 Timothy 3:16](#)) then what we see around us ought to fit with what the Bible says about how it all got here. And it does.

## Evidence for the Creator God of the Bible

### 1. Natural law

The *Laws of Thermodynamics* are the most fundamental laws of the physical sciences.

- 1st Law: The **total** amount of mass-energy in the universe is **constant**.
- 2nd Law: The amount of energy **available for work** is running out, or *entropy* is increasing to a maximum.

This means the universe cannot have existed forever, otherwise it would already have exhausted all usable energy. The 2nd Law implies that no natural process can increase the total available energy of (i.e. 'wind up') the universe. So it must have been 'wound up'; (high available energy) by a Creator 'outside' (and greater than) the universe.

### 2. Life itself

The evolutionary world view must explain the [origin of first life](#), for evolution to even start. So materialists have faith that life began from non-living chemicals ('chemical evolution'), then try to find evidence for it. Yet observational science shows that life arises only from life (the law of biogenesis), with no known exception. Even the simplest life needs much elaborate machinery, including the [ATPase electromotor](#), to use energy and make copies of itself. Since natural selection involves differential *reproduction*, it cannot be responsible for the first self-reproducing cell. There are

vast hurdles for non-living chemicals to overcome to form life, because real chemistry works in the opposite direction. Interestingly, the world's leading atheistic philosopher, Antony Flew, abandoned atheism last year - one major reason was that Darwinian evolution presupposes an entity "[which already possessed reproductive powers](#)", yet every discovery of molecular biology underlines the impossibility of such an entity arising spontaneously.

### 3. *Biological changes*

Observed changes in living things head in the [wrong direction](#) to support evolution from microbe to man (macro-evolution).

Textbook examples of adaptation by [natural selection](#) (first described by the creationist [Edward Blyth](#), pre-Darwin) always involve *loss* of genetic information. Mosquitoes may adapt to a DDT-containing environment by becoming resistant, because some already have the genes for DDT resistance. But overall the population loses genetic information (any genes not present in the resistant ones are eradicated from the population, since the non-resistant mosquitoes killed by DDT cannot pass on genes).

Information science leads us to expect that random changes during the transmission of information (e.g. reproduction) would generate 'noise' and degrade the information. A vast number of experiments and observations show that this is overwhelmingly what [mutations](#) (genetic copying mistakes) do - the opposite of what evolutionary belief requires.

Mutations cause several thousand human diseases. Even where a mutation is beneficial (e.g. [wingless beetles on windy islands](#)) biological complexity is virtually always destroyed, not increased.

This *observed* downhill trend of heritable changes in living things (mutations, selection, adaptation - even to the extent of [speciation](#) - and extinction) is consistent with the concept of original created gene pools - with high initial variety - being depleted since. To suggest that the informationally downhill 'micro' changes one observes (routinely but erroneously used as 'proofs of evolution') can accumulate over time to give the required (uphill) changes for microbe-to-man evolution is like a businessman arguing that many small losses will produce a profit, given time. The observed changes do, however, fit a Creation/Fall model well.

### 4. *Fossils*

Although Darwin expected vast numbers of transitional fossils to be found, only a handful of disputable ones are cited. While it is always possible to maintain faith in evolution by postulating unobservable mechanisms, the *systematic* paucity of the anticipated evolutionary 'links' on a global scale is powerful, positive evidence for biblical creation.

### 5. *The age of things*

The [evidence](#) for a 'young' earth/universe is, by definition, evidence for biblical creation, because naturalistic evolution, even if possible, would require eons. There is much evidence consistent with a relatively young age of the universe, such as the [decay of the earth's magnetic field](#), including rapid paleomagnetic reversals; fragile organic molecules in fossils supposedly many millions of years old; [too much helium in deep zircons](#); not enough [salt in the sea](#); [carbon-14 in coal and oil supposedly many millions of years old](#); [polystrate fossils](#) that extend through strata supposedly representing many millions of years; inter-tonguing of non-sequential geological strata; the small number of [supernova remnants](#); [magnetic fields on 'cold' planets](#); and much more; see [What about carbon dating?](#)).

Elapsed time extending back beyond one's own lifetime cannot be directly measured, so all arguments for either a long or a short age are necessarily indirect and must depend on the assumptions on which they are inevitably based.

Young-earth arguments make sense of the fact that many fossils show well-preserved [soft parts](#). This requires rapid deposition and rapid hardening of the encasing sediment. Observations of e.g. [multiple geologic strata](#) and [canyons](#) forming rapidly under catastrophic conditions in recent times indicate that the entrenched slow-and-gradual, vast-age thinking may well be markedly in error.

#### *6. Cultural-anthropological evidence*

Hundreds of traditions about a global Flood, each with features in common with the biblical account, are known from indigenous peoples around the world. These provide evidence of the reality of that account. Molecular evidence has revealed a previously unrealized genetic closeness among all the 'races'; of people (see [How did all the different 'races' arise?](#)), consistent with a recent origin from a small population source. This denies the previously widely held (and [racism-fostering](#)) belief that human races evolved their characteristic features during long periods of separate 'evolution'.

#### *7. Design and complexity*

Incredibly complex coordinated biological systems are known in which no conceivable part-coordinated, part-functioning, simpler arrangement would be other than a liability. Some examples are the [blood-clotting cascade](#), the [avian lung with countercurrent exchange](#), the photosynthetic apparatus, and the [metamorphosis of caterpillars to butterflies](#). [Examples](#) abound in living things.

The immense complexity of the human brain—its consciousness, creativity and power of abstract reasoning, with capacities vastly beyond that required for sheer survival, is perhaps the most 'obvious' evidence for intelligent creation.

We have seen that life is characterized by incredibly complex information-bearing (programmed) systems. No spontaneous physico-chemical process is known which could have generated such programs in the first place without outside intelligence. And as information is transmitted, it is overwhelmingly observed to degrade, not build up.

The most reasonable inference from such observations is that outside intelligence (vastly surpassing humanity's) was responsible for an immense original store of biological information in the form of created populations of fully functioning organisms. Again, this is powerfully consistent with the Genesis creation account.

### **A challenge for Skeptics:**

Since the 'big picture' of the evidence in the world today fits so consistently with the Bible's account of our origins, what tangible basis is there for anyone to reject the claim that there is indeed a Creator who has spoken by His prophets in the Bible?

### **Australian Skeptics, First Speaker**

The question we have been asked to address here could have the simple answer of "Yes", because the two options are not mutually exclusive. It is quite possible that the universe and life came to where they are today by a multi-billion-year process of evolution following a six-day big bang, but taking this position leaves us nothing to talk about.

This debate then is really about the evidence for two of the many possible scenarios about the origin of what we see around us today. I will call these the Creationist view and the Scientific view. I will repeat that these are only two of many possibilities. Refuting one does not automatically make the other one correct, so what is required is to evaluate the evidence for both and to compare the bodies of evidence to see which more accurately describes reality and accords with what else is known about how the universe works.

Before going on to discuss these two world views, I would like to say what is necessary to turn a hypothesis into a scientific theory. Science requires that any assertion must meet three criteria:

- *Testability* – This really means that the claims make predictions which can be tested for validity, either by direct experiment or by observation of regularities in what has happened in the past. "Observation" can be indirect or by inference – nobody alive today has ever seen an electron or an ice sheet covering Europe, but the theories about both result in testable predictions.
- *Falsifiability* – It must be possible to imagine the sort of observation or experimental result which would result in the theory being shown to be false. It is possible, for example, to imagine that under certain circumstances an increase in pressure lowers the boiling point of water. That no such observation has been made does not of itself make the relevant physics theories correct or valid, but the recognition of the possibility allows the theories to be a part of science.
- *Corrigibility* – Science does not claim absolute truth or complete knowledge, and any theory accepted as being scientific must allow for correction and modification as knowledge is extended and new information becomes available. This allowance must go as far as abandoning a theory completely if subsequent research shows that the observations it was based on were illusory or that the methodology used to investigate it was flawed. Newton's calculations about gravity are perfectly useful for everyday

use, or even for navigating spacecraft to distant planets, but Einstein extended the theory to interactions between objects further towards the ends of the mass scale. Lord Kelvin's work on thermodynamics has been refined over the years as better measuring equipment and calculating power has become available, but his theories about the age of the Earth (which he corrected himself over the years as better data became available) were discarded completely when radioactive decay was identified as the mechanism maintaining core temperature..

Creationism makes the following claims, among others:

- The universe and everything in it was created somewhere between 6,000 and 10,000 years ago.
- The process of creation took place over six twenty-four hour days.
- The sequence of creation was (Genesis 1):
  1. Pre-existing water
  2. Light and darkness
  3. Heaven as distinct from water
  4. Dry land and oceans
  5. Plant life
  6. The sun, moon and stars
  7. Fish, whales and birds
  8. Land animals
  9. Man and woman
- Except when the order of creation was (Genesis 2):
  1. The earth and the heavens
  2. Man
  3. Plant life
  4. Animal life
  5. Woman
- There was a world-wide flood about 4,500 years ago
- In this flood, all human, plant and animal life was destroyed except for eight people and the plants and animals which they had managed to load onto a boat and keep alive for just over a year
- All humans on Earth today are descendants of those eight people
- All animals and plants on Earth today are descended from the occupants of the boat
- All geological formations seen today were laid down during the eight to ten months of the flood

I will leave it up to the opposing side to provide evidence for these claims, and to say how they can be tested, the sort of evidence which would indicate that they may be

false, and what action would be taken to correct or adjust them in the light of additional evidence.

The scientific position makes the following claims, again among others:

- According to the latest research, the universe is about 13.7 billion years old. The conditions and events which initially brought the universe into being are unknown at this time, but not necessarily unknowable
- The Earth is approximately 4.5 billion years old
- There are certain rules, processes and constant values which operate across space and apply throughout the universe
- Apart from an extremely tiny period of time following the universe coming into existence, there are certain rules, processes and constant values which operate across time, so that some observations made now have applied to the universe since it began and some conditions of the new universe still apply today
- Self-replicating molecules first appeared on the Earth about 3.5 billion years ago
- All life on Earth is descended from these molecules, although there may have been many originations at different times and in different places
- The enormous variety of life forms on the planet is the result of a very long process of trial and error, with many dead ends and many (but far fewer) successes
- Every living organism today, be it plant, animal, fish, bacteria or whatever, has a long line of ancestors who all have one thing in common, and that is that they were able to produce viable offspring which themselves lived long enough to reproduce

None of the above claims is derived from guesswork or wishful thinking or divine fiat. All are based on the principle of Occam's Razor, that is, they reflect the best interpretation of available data and observations. They are what fits the evidence.

The scientific evidence for evolution does not come from just one source, but is derived from research in many fields of science. Some areas of science are so tightly wedded to the principle that they would cease to exist if the creationists are right. It has been said that evolution is the most important theory in all of science, simply because of its pervasiveness and what would have to be thrown away if it were wrong.

Here are just some of the sciences affected and the evidence they produce:

- *Biology* – All living matter on Earth shares a common method of coding for the design of the organism and for producing chemicals needed for the organism to survive in its environment. Everything has genes, genes are made of DNA, and genes are shared widely across the spectrum of organisms. Humans share 98% of their genetic coding with chimpanzees, our closest relatives, but we also share a not insignificant proportion of our genes with tomatoes.

- *Geology* – The physical world we see today has been produced through a long and often repeated process of vulcanism, glaciation, tectonics, erosion, sedimentation and other processes. There are reliable ways of dating both the age and the sequence of historical events.
- *Palaeontology* – The age and sequence of fossils support both evolution of species and the great age of the Earth.
- *Anthropology* – There has been continuous human occupation of some locations for more than 40,000 years and evidence of the development of modern humans from ancestors hundred of thousands of years in the past.
- *Nuclear physics* – The mixture of isotopes in rocks and the known decay rates of radioactive elements indicate rocks of a great age.
- *Cosmology and astronomy* – The universe is a very big place and the edges are a very long way away.

One of the criticisms levelled against evolution is that it is “only a theory”. This criticism is disingenuous for two reasons. First, the word “theory” has a specific meaning within a scientific context and it means an idea which has enough evidence to support it such that rejection would require not just philosophical arguments but disconfirming evidence. Second, it is a strawman argument. Science is always a work in progress. The fact that the theory of evolution cannot provide absolute answers to all questions about the origins of life does not invalidate the theory any more than the fact that research has not yet uncovered a cure for cancer invalidates medicine or the fact that oil companies drill dry holes invalidates geology. The world-wide scientific community exists just because there are unanswered questions. That is what science is and is for. Science does not have a book which states absolute truths - if it did it would be religion, not science.

All science expects of a theory is that it be testable, falsifiable and corrigible. The theory of evolution is all three. Creationism is none of the three. The evidence for evolution is overwhelming. The evidence for special creation is non-existent.

# The origin of the species: second statements in the debate

- [433 Comments](#)
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Commentary by Phil Uebergang  
June 16, 2005 01:16 PM

Did the universe and life evolve, or was it specially created in 6 days? Here are the second arguments in the scientific debate on our origins. For those who have just come in, the first arguments are located [here](#), along with an explanatory introduction and biographies of the participants. Margo has closed the comments boxes to the [debate preview](#) and part one of the debate.

## **For special creation: Answers in Genesis, second speaker**

The concepts of creation and evolution both lead to testable scientific predictions, as Darwin knew and as our first post explained. For example, evolution anticipates innumerable transitional forms but these have not been found. Creation anticipates gaps between kinds, which is more consistent with the fossils.

Anyway, the important question is which proposition is true, not which best fulfils some self-serving definition of 'science'. We reject William Mayer's (University of Colorado) anti-truth claim at the Arkansas trial (1982) that it 'may well be that creationism is correct about origins,' but ['even if it were correct, it's not scientific'](#).

We have pointed out that evolution is a deduction from the philosophy of materialism. So the correct contrast is 'creationist v materialist' not 'creationist v scientific'.

It's silly when some, including Gould and the NAS (USA), claim that creation is not scientific because it's not falsifiable or testable, then turn around and claim that creationist claims have been examined (i.e. tested) and proven false (i.e. falsified). In [reality](#), both paradigms have led to fulfilled and failed predictions; in each case the models are refined, but the underlying axioms (unprovable beliefs) remain the same.

In any case, creation v evolution is about the truth of one-off events in history. One can't scientifically prove that Hannibal won the Battle of Cannae; this is proven historically (e.g., eye-witness records). But our opponents dogmatically reject the eye-witness account of our Creator, like Lucy in the [Parable of the Candle](#). Instead they rely on methods that they agree are 'corrigible', so by definition they can never be ultimate truth. Despite our opponents' caricature of creationists' positions as immutable dogma, all science, including that used to support creation, is subject to change. In reality:

Both evolutionists and creationists often adjust their models and submodels to accommodate new data.

The axioms underlying the evolution paradigm (exclusion of supernatural explanations, a religious dogma in its own right) never change, as is true also for biblical axioms.

Our opponents, as long-standing public anti-creationists, should know better than to present caricatures of either the [Ark account](#) or our position on [geology](#). The vessel did not need to carry ‘all plants and animals’ (most animals live in the sea anyway, and much vegetation could survive outside). The account implies that only land-dwelling vertebrate animals were sent on board. And we don’t claim that the Flood formed ‘all geological formations seen today’. For example, the [Ice Age](#) (a logically inevitable consequence of the world Flood) was responsible for much recent geology.

## The options

Either the universe was made (creation *sensu lato*) or it wasn’t (evolution); there are no other options. [The Law of Excluded Middle](#) applies even to Skeptics. Obviously we don’t claim that disproof of evolution proves biblical creation, but it is good evidence for creation in general. Evolutionists from the time of Darwin have used exactly this form of argument, i.e. claiming evolution as the only option because ‘[God wouldn’t have done it that way \[they erroneously suppose\], so evolution must’ve done it.](#)’

## Genesis creation

Our opponents have raised the discredited old canard that Genesis 1 and 2 contradict each other. Clearly Jesus didn’t see it that way; He quoted both Gen. 1:27 and 2:24 in Matt. 19:3–6, referring to the same man and woman. While this won’t influence open atheists like Willis, Ritchie and Bowditch, one would think this would count for a professing Christian like Smith.

Of course, Jesus knew that Gen. 1:1–2:4a was a summary outline of all creation, while Gen. 2:4b ff. elaborated on the events in Day 6, unlike modern Skeptics, who disregard ancient near-eastern literature patterns. Oriental scholar Kenneth Kitchen [pointed out](#) that failure to recognize such distinctions ‘borders on obscurantism.’

And the correct translation of the *waw* consecutive *wayyitser* in Genesis 2:19, taking into account the context of Genesis 1, is the pluperfect, i.e. God ‘had formed’ the animals which He now brings to Adam to name. Hebrew scholar H.C. Leupold [said](#) that ‘the insistence of the critics upon a plain past [tense] is partly the result of the attempt to make chapters one and two clash at as many points as possible.’

## Origin of life

Our opponents blithely assert that life came from ‘self-replicating molecules’. This is merely hand-waving. If they mean RNA, then they need to jump the [huge chemical hurdles required](#) to form RNA from simpler molecules, and then get this to [replicate itself](#). Or have they another [self-replicating molecule](#) in mind that could be an

ancestor of us all? A truly sceptical mind would want to know, as the scientific literature does not reveal such wonders!

## **Biology**

Life sharing a common genetic coding system fits beautifully with the notion of a unified designer. The code is not universal, incidentally, as there are exceptions such as Paramecium, and some organisms have extra amino acids in their genetic code. These created exceptions don't fit comfortably with the common ancestry claim, because if one organism evolved into another with a different code, all the messages already encoded would be scrambled, just as written messages would be jumbled if typewriter keys were switched.

The Skeptics are out of date to claim that humans and chimps have 98% similarity in their DNA — [the figure is more like 95%](#), or less. And with 3 billion DNA 'letters' in our genome, this is 150 million differences, or 50 [large books worth of information](#) that needs to be generated and there is no adequate mechanism to do so.

## **Nuclear physics**

We don't deny that [amounts of isotopes](#) and [present](#) decay rates can be measured accurately. But the long-ages conclusion is an interpretation of these data. The mixture of isotopes in rocks and the known decay rates of radioactive elements would only indicate great ages if the assumptions used were valid. We have repeatedly shown how these methods often [fail on rocks of known age](#), so why trust them on rocks of unknown age? And [different methods often disagree](#), so how do you know which method, if any, is correct? Furthermore, any C-14 in a sample 'millions of years old' (recently also reported in several diamonds, that can't be said to be contaminated with modern carbon) is, by definition, evidence against those long ages (it shouldn't be there, because of its short half-life). And anyway, evolutionary geologists won't accept radioisotope dates either, if the 'date' disagrees with what they think it should be.

## **Is evolution essential for science?**

Our opponents' claim, 'evolution is the most important theory in all of science', would have been news to the creationist founders of modern science, such as Kepler, Newton, Pascal and Faraday. In fact, only biblical creation provides the [propositions which must be true for science itself to work](#) (the orderliness of the universe, and the non-capriciousness of natural law, for example). For creationists, these are *theorems* deducible from biblical propositions, while materialists have to accept these by faith as *axioms*. This means that they are in the unfortunate position of [having to presuppose biblical truths](#) in their very attempts to deny them with 'science'.

## **Real science: no need for evolution**

Most scientists deal with [operational science, not origins](#), and so [have no use for evolution](#) ('goo-to-you') anyway. In fact, the Skeptics are refuted by the irony of evolutionists on the one hand claiming that evolution is essential for biology, but on the other hand [lamenting](#) the move away from evolution 'to a more utilitarian science' which demands 'more practical benefits from science'. Evolutionist Larry Witham cites a recent BioEssays special issue on evolution, which shows how useless evolution really is for real science (*Where Darwin Meets the Bible*, 2002):

“While the great majority of biologists would probably agree with Theodosius Dobzhansky’s dictum that ‘Nothing in biology makes sense except in the light of evolution,’ most can conduct their work quite happily without particular reference to evolutionary ideas”, the editor wrote. “Evolution would appear to be the indispensable unifying idea and, at the same time, a highly superfluous one.”

### **Trial and error**

Our opponents rightly point out that the evolutionary process entails ‘a very long process of trial and error, with many dead ends and many (but far fewer) successes.’ However, observational science shows that organization is best explained by an organizer, programs by a programmer.

And professing Christians take note—this trial and error process doesn’t sound anything like the God of the Bible. It entails that God used enormous amounts of disease, bloodshed, suffering and death ('the last enemy' 1 Cor. 15:26) to bring about a creation He called 'very good' (Gen. 1:31). [Jesus the Creator](#) said 'blessed are the meek', yet evolutionism involves the strong grinding the meek underfoot. Indeed, antitheists like [Carl Sagan](#) and [Jacques Monod](#) couldn't understand how any Christian could believe that a God of love used such a wasteful, cruel and inefficient process to create life. The reality is, of course, that He didn't.

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### **For evolution: Australian Skeptics, second speaker**

Australian Skeptics has a prize on offer for anyone who can demonstrate paranormal powers. As a member of the AS committee I am ineligible to win the prize, but predicting what creationists are likely to say is not considered to be a psychic power. In 1997, Michael Shermer published a small tract named *How to Debate a Creationist* in which he lists 25 arguments used by creationists and the answers to those arguments.

Answers in Genesis offered 14 of those arguments in their initial statement, and of the other 11 several do not apply here because they specifically relate to the teaching of creationism in schools. This suggests that creationism has not advanced since 1997 and that lessons learned back then have been forgotten. This is consistent with the change of name from the Creation Research Foundation to Answers in Genesis. Once

they claimed to do research and science; now there is no need for research because everything anyone needs to know can be found in a 17th century book.

Much emphasis is placed on the scientific qualifications of both sides in this debate, and this fits the question being considered and the fact that we were invited to participate in a debate about science. If someone who claims that the Earth is only about 6,000 years old is going to debate the science of the claim, then those arguments should include evidence to support the claim. Instead, what we get from creationists is obfuscation, misrepresentation and logically fallacious arguments which purport to prove that an alternative theory is worthless because it is not perfect. That there are flaws in the evidence for a very old Earth and universe does not in any way validate the theory that the ages must be very short. Still, when you have no evidence you have to do the best with what you've got.

Before going on it would be worthwhile to say what evolutionary theory is not about. It neither requires nor denies the existence of a god. It is not about the origin of life. It is not about the origin of the universe. It is about the journey which has brought us from there to here; whether that journey was initiated or guided by God is outside the realm of scientific investigation. To say that evolution cannot explain the Big Bang or abiogenesis is no criticism of the theory at all and is just a logical fallacy. To say that evolution is predicated on the non-existence of God is to talk nonsense and attempt to couch the debate in religious rather than scientific terms.

Speaking of religion, Answers in Genesis abandoned any pretence to be engaged in scientific debate when they used the section heading "Evidence for the Creator God of the Bible". That they went on to offer no such evidence was not surprising, nor was it surprising that the evidence offered was of the "they are wrong so we must be right" variety – the same arguments that have been produced (and rebutted) countless times in the past.

As it seems safe to assume that the topics chosen by Answers in Genesis when making their case are those of paramount importance, I will stick to the same topics.

### **Laws of Thermodynamics**

It wouldn't be a creation/evolution debate without misrepresentation of the Laws of Thermodynamics and their implications. The claim that "the universe cannot have existed forever, otherwise it would already have exhausted all usable energy" is classic straw man, because no scientist claims that the universe has existed forever. The best estimate now of the age of the universe is 13.7 billion years, which is a lot shorter than forever (and a lot longer than 6,000 years). And how did scientists come up with this number? By measuring the energy in the universe. See [here](#).

### **Life itself**

As I said above, there is no requirement for evolutionary theory to "explain the origin of first life", because evolution is about changes over time. Scientists simply do not know how life first arose on Earth. There are several competing theories, such as the

production of amino acids from atmospheric gases and lightning as demonstrated by Miller's experiments, or panspermia as suggested by Hoyle, where the relevant molecules came from elsewhere in the universe (which simply moves the answer further away), or the effects of ultra-violet light on the contents of ponds. Perhaps God did it. The last option removes the need for any further research into the "little bang", but it says nothing about what happened afterwards. For more about abiogenesis, see [here](#).

### **Biological changes**

Again, it is almost impossible to imagine discourse with creationists without the matter of mutations coming up. The fact that evolution doesn't require mutations (although they are a useful source of genetic change and diversity) has been explained many times, and will no doubt have to be explained many times again. The fact that mutations can be either harmful or beneficial has also been explained before. The statement that "[i]nformation science leads us to expect that random changes during the transmission of information (e.g. reproduction) would generate 'noise' and degrade the information" is wrong, unless Shannon and Weaver were wrong about noise increasing information. (You can see some more [here](#) and [here](#).)

### **Fossils**

Another all-time favourite. "Although Darwin expected vast numbers of transitional fossils to be found, only a handful of disputable ones are cited". They might be disputed by creationists, but they are not disputed by scientists. And a very big hand is needed to hold that handful. See [horses](#) and [whales](#). It requires no predictive power to suggest that as these sequences are not complete on a daily basis that explanation of the gaps will be demanded.

### **The age of things**

"The evidence for a 'young' earth/universe is, by definition, evidence for biblical creation, because naturalistic evolution, even if possible, would require eons." The brief answer to this is "Show us that evidence", followed by the observation that 4.5 billion years qualifies as "eons". The presence of carbon-14 in coal is mentioned as if such a thing exists. In fact, the absence of that isotope in coal is one of the ways that geological deposits can be dated relative to coal. As for the rapid formation of canyons, anybody who compares Providence Canyon in Georgia (up to 50 metres deep, maximum 400 metres long) or the erosion of ash deposits around Mount St Helens with the Grand Canyon must be hoping that the readers have not seen the actual formations.

### **Cultural-anthropological evidence**

There may well be hundreds of societies with flood myths, but this just represents the fact that for most of human history settlement has been near rivers and rivers flood. I

have no doubt that the Aboriginal tribes who inhabited the flood plain of the Hawkesbury River for the last 45,000 years had ancient myths about huge floods.

It should come as no surprise that humans from all over the Earth are very closely related genetically. We are, after all, a single species. If this is to be taken as evidence of special creation, then it would seem reasonable to ask why we have any genetic relationship at all with lobsters. Or palm trees. Or tomatoes. See [here](#).

### **Design and complexity**

At last we come to the argument from incredulity. “If I can’t understand it, God did it”. All complexity means is that there are no constraints on evolution to force it to do things simply. Evolution is not a teleological process, it is a method of trial-and-error, with what works in a particular environment surviving and with what works even a tiny amount better surviving and multiplying better. Evolution has had a long time to do its work, and the fact that we might not know every step in the evolution of roots and leaves into gills into lungs just shows that there are things that we don’t know. Yet.

The old “what use is half an eye” argument has been answered long ago, and as for the brain, there are countless examples of different brains adapted to different purposes. Yes, the human brain is one of the things that separates us from other species. That and opposable thumbs make us human. Plus the poor design of the spine, pelvis and birth canal. You can read about brain evolution [here](#).

### **A challenge for Skeptics**

“[W]hat tangible basis is there for anyone to reject the claim that there is indeed a Creator who has spoken by His prophets in the Bible?”

None whatsoever. As I said above, evolution says nothing about God and requires neither the presence nor absence of a god. If there is a Creator, He may very well have used evolution as the means to produce the immense variety of life we see on Earth today. An efficient and non-meddling God would work like that.

Now, where is that evidence for a 6,000 year old Earth? Evidence that cannot be dismissed by Occam’s Razor.

# The origin of the species: final statements

- [477 Comments](#)
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Commentary by Phil Uebergang  
June 19, 2005 12:02 AM

‘Did the universe and life evolve, or was it specially created in six days?’ Here are the third and final arguments in the debate on origins. The first two arguments are [here](#) and [here](#). The first argument also includes a brief introduction and biographies of the participants. Margo has closed comments to parts one and two of the debate.

Thanks to the participants in the debate from both Answers In Genesis and the Australian Skeptics, all of who have gone out of their way to be involved. The task set was not easy given the 1,500 word limit for each argument yet they have provided entertaining and erudite reading, and judging by the number of comments generated their essays have been contentious and thought provoking. I extend my thanks to Carl Wieland and Peter Bowditch in particular for organising their teams and meeting the deadlines.

A large part of the credit for the success of the debate also goes to our volunteer moderator, Webdiarist **Terrence Pihlgren**, whose contribution in editing and posting well over 700 comments (up until Saturday evening, let alone what’s to come) has been greatly appreciated.

If you have any specific questions for the debating teams, please email Answers in Genesis at [Q@answersingenesis.com](mailto:Q@answersingenesis.com), and for Australian Skeptics visit their web site [here](#).

## **For special creation: Answers in Genesis, third speaker**

### **The Bible contains everything we need to know?**

We don’t claim this—it would be clearly ridiculous—but it contains everything needed to obtain *eternal life*. Within the boundaries of what God has revealed about world history there is *enormous* scope for research. And of course, our [name change was not a “backing away from science”](#).

Our opponents’ accusations of obfuscation, misrepresentation and logically fallacious arguments are “elephant hurling”, because they provide *no evidence* for these.

### **“Flaws in a theory don’t count”**

Surely they are valid arguments to use against it? Arguing otherwise reinforces the point that evolution, at its core, is a philosophy and, for true believers, not ultimately open to refutation.

## **Evolution and God**

We've never claimed that evolutionary theory denies the existence of "a god" (though it certainly flies in the face of the God of the Bible). But its philosophical foundations are pure naturalism, which is why today, supernatural creation is ruled out *by definition*. This was beautifully demonstrated by the Skeptics' claim (last post) that by referring to evidence for the Creator God, we had abandoned science.

Atheist/rationalist/skeptic sources worldwide routinely, publicly, revel in [evolution's support for their religious view](#). Evolutionary superstar Richard Dawkins said that Darwin made it possible to be an "intellectually fulfilled atheist". (The Skeptics are here carefully following the [advice](#) given by the world's leading anticreationist, Eugenie Scott, to her fellow atheists: keep reassuring "religious people" that it's "possible to believe in evolution *and* God". Indeed it is, if you're not fussy about whether the God you believe in tells the truth about history.)

### **Limiting definitions**

In their opening salvo, our opponents proposed both *chemical evolution* (the origin of first life) and *cosmic evolution* (big bang to stars). So we were amazed that despite this, and despite the textbooks being full of both concepts, evolution is suddenly and conveniently limited to biology (because we highlighted the impossibility of abiogenesis?). Both are part of today's evolutionary world-and-life belief—that, unaided, nothing gradually turned into everything.

### **Huff and bluff**

They claim we misrepresent the Laws of Thermodynamics, but offer no evidence of this. (Actually, it's the Skeptics who have previously misrepresented both the [Second Law of Thermodynamics](#) and [probability arguments](#).) The *deductions* from those laws are clearly unpalatable, so we get a diversionary claim—that the age of the universe is determined by measuring its energy. Huh? Check their link to see the fuzzy disingenuity of this claim: the WMAP data is used to help make a guess as to which particular Big Bang model is preferred, and what assumptions to make about mysterious unseen matter. Then from that, plus various assumptions about the Hubble constant, an "age" comes out of the other end—*given* the Big Bang. But even one of their own, physicist Colin Keay, is skeptical of the Big Bang, as are several prominent cosmologists who hold to versions of the "steady state" idea. (Our opponents wrongly assert that "no scientist claims that the universe has lasted forever".)

### **"Evolution doesn't require mutations"**

It's almost embarrassing to have to give lessons in rudimentary evolutionary theory. One of the greatest evolutionists, the late Theodosius Dobzhansky, wrote: "The process of mutation is the only known source of the raw materials of genetic variability, and hence of evolution..." (*American Scientist*, Winter 1957, p. 385).

Our opponents lamely state that beneficial mutations exist—as if we denied that, despite our having described beneficial (but downhill) mutations earlier.

### **"Show us the evidence for a young world"**

This oft-repeated mantra seems to be more for the benefit of non-discerning readers who might not check our links, where we provided such evidence. BTW, evidence against long age *is* also evidence for short age, by simple logic.

### **Noise *increases* information?**

Another incredible claim; like saying static on your radio adds useful information. But this is equivocation. “Shannon information” merely concerns how many bits (0, 1) are needed to specify something (e.g. for electronic transmission). Specifying a random pattern may require more bits than meaningful information. E.g., if “superman” is mutated to “sxyxvawtuayzt”, information is clearly *lost*, but there is *more* “Shannon information”, because it takes more bits to transmit this longer sequence. This highlights the difference between complexity and specified complexity; a pile of sand is complex (*many* bits are needed to accurately describe it), but is information-poor—it specifies nothing. Living things abound in **specified complexity** (e.g., proteins with specific 3-D structures that catalyze particular chemical reactions).

### **Horses and whales**

Nearly all specimens invoked as evidence for horse “evolution” are just **variants of horses**, or **variation within a created kind**. Much of the same variation seen in fossil horses is present in today’s horses (size, toe number, rib number, etc.).

The **whale stories** would make Lewis Carroll proud. The origin of whales from land creatures is so “clear-cut” that, for many years, artiodactyls (hippos) were the ancestors, then for some time the fossils supposedly showed that whales came from the (extinct) mesonychians—and now artiodactyls (other than hippos) are returning to favour! Obviously, there is **no clear line of descent shown by the fossils**, contrary to the grand claims.

### **C-14 in coal doesn’t exist?**

The chutzpah (or, in charity, ignorance) demonstrated by this Skeptic claim is astonishing. Indeed, their claim *should* be true if millions of years were fact. But carbon-14 above background levels is **ubiquitous** in coal (**and other supposedly ancient organic material**), and the secular literature discusses the “problem”. See e.g. Lowe, D.C., Problems associated with the use of coal as a source of <sup>14</sup>C-free background material, *Radiocarbon* 31:117–120, 1989. (For an updated bibliography, see Giam, P., *Origins* 51:6–30, 2001.)

(Better informed anticreationists have sought to explain the C-14 in “ancient” **diamonds** by postulating its creation underground from neutron bombardment of N-14. But measurements show hopelessly too few free neutrons for this.)

### **Catastrophic carving of Grand Canyon**

Nowadays, even some evolutionary geologists hold to this. And nearly everyone now believes that the US's entire Channeled Scablands, including the granite Grand Coulee Gorge, were carved rapidly through cataclysmic Ice Age flooding.

### **Worldwide stories of a global Flood**

We think, gentlemen, given the astonishing common elements, e.g. mountaintops covered, birds sent out, etc. that you need to do better than “river overflows”.

### **The closeness of humanity**

It is misleading (also circular reasoning, if examined closely) to imply that this is an obvious deduction from the single-species status of humanity. Earlier evolutionists also considered us as one species, but nonetheless derived **racist notions** of huge differences between people groups from their belief in long periods of “separate evolution”. Our opponents evade the point: molecular biology reveals an astounding degree of relatedness—far exceeding that required for mere species membership, but predicted from biblical history.

### **Speaking of circularity...**

They present as *evidence* for evolution (which indeed teaches that we are related to tomatoes) the *assertion* that we are related to tomatoes! (Biochemical similarity between humans, plants and animals is an **expected design feature**—what would we eat otherwise?)

### **Inconsistency**

Waxing theological, they tell us the way an “efficient” God “would work”—through evolution—yet they previously described this as “trial-and-error”.

### **Bad design in humans?**

The “half an eye” argument has **not been answered at all**. And no one has demonstrated how a better spine could be designed. An evolutionary approach to back problems actually **made bad backs worse**! And Genesis 3 says something about problems giving birth in humans (we live in a fallen world; no longer perfect).

### **Occam's Razor?**

Real sceptics would apply this *without favour*. When carbon-14 is found in coal or diamonds, giving dates of thousands of years, the simplest conclusion would be: they are **not** millions of years old. But the paradigm will not allow that, so, we see a denial

of the fact. Others have invented unworkable secondary hypotheses to try to “explain away” the data.

## **Conclusion**

Given the significance of the subject, we would have preferred our opponents to engage more cogently with the actual scientific arguments presented, though their approach should help many to see that the evolutionary emperor is indeed unclothed.

Seeing the Skeptics’ track record to date, we trust readers will be sufficiently sceptical of claims in their concluding rebuttal to check them with [our site’s](#) search engine.

This whole debate is driven by presuppositions, not data. Historical data have to be interpreted within an existing framework. We choose the framework provided by the Creator in the Bible (evolutionists choose [naturalism](#) instead). When we do that, the evidence makes sense. Otherwise, our very thoughts are just the results of eons of chance interactions of atoms; [so why should we trust them?](#) And how can there be such a thing as freedom to think (volition) or morality, in a world that has not been purposefully created, but just happened? Life’s purpose is that we know God and enjoy His fellowship forever. That’s why Jesus Christ, God the Son, came into the world, to rescue the corrupted race of Adam and make it possible for us to approach our Creator.

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## **For evolution: Australian Skeptics, third speaker**

The original question asked: “Did the universe and life evolve, or was it specially created in 6 days?”. The only interpretation of this question which makes sense is that the two sides are being asked to offer evidence and arguments to support either of the two views:

- What we see around us today is the result of a very long process of change and modification, or
- What we see is what was created in a 6-day period 6,000 years ago, except for what was recreated by a massive flood 4,500 years ago.

We have been told that evolution is impossible because there has not been enough time for it to happen. When we offer scientific evidence that the universe is 13.7 billion years old, we are asked for evidence and told that there has not been enough time. We are told that there are no intermediate fossils, and when we provide evidence of intermediate fossils we are told that there are no such things because now there are even more gaps to explain. We are told that the Grand Canyon (350 kilometres long, 1,600 metres deep, between 6 and 25 kilometres in width) was made in a few months. When we offer evidence that it took a very long time to build the surrounding rocks

and then carve the canyon, we are told about an erosion gully that is 400 metres long and 50 metres deep as if this is somehow relevant.

What is relevant, however, is that the only form of argument offered by our opposition seems to be to say “You are wrong so we must be right”.

Our opponents have consistently refused to provide any evidence in favour of their position other than by referring to things that they have themselves said before or by reference to the Bible. It is hard to imagine any paper in a scientific journal being taken seriously if almost all of the references were to the same author’s previous work, but we are expected to believe what Answers in Genesis say because the same things have been said before on the Answers in Genesis web site. One of the spurious arguments used by creationists is that the dating of rocks and fossils is circular because one is used to support the other. Even though this argument has been shown to be false many times, it is hard to resist the temptation to say “Pot, meet kettle”.

It is the reliance on the Bible which is most puzzling, however, as our opponents have now stated that the Authorised King James version of the Bible from 1611 is not inerrant and is, in fact, an unreliable translation! That’s right – the most important and influential book ever written in the English language (the works of Shakespeare and the Book of Common Prayer make up the trifecta) is, as many have surmised, merely a magnificent work of literature and not the Word of God. What was God thinking when He let King James’s editors put this book together? Why did He allow them to make mistakes? Could it have been a test, or perhaps, as Phillip Grosse suggested with regard to fossils and Adam and Eve’s navels, just God being deceptive?

The real question becomes “What else in the Bible is wrong?”. If we cannot accept that Genesis 2 is correct, then what can we accept? If translation errors are possible, who is to say that the English translation of the Sermon on the Mount in the King James Bible is anything like a true account of what Jesus said? After all, it was translated from Greek and the author of Matthew was working from a third-hand account of a speech given in Aramaic. Much emphasis has been placed on the lack of first-hand, eye witness accounts of evolution happening, but surely the same caveat must be placed on hearsay filtered through multiple translations. What a mess! If the King James Bible can’t be trusted to tell us about the Rising of the Sun, what can it reliably say about the Rising of the Son?

Perhaps this problem with the Bible not being accurate and reliable might help to explain another observation about this debate. Despite a quite explicit mention in the question, our opponents have very carefully avoided any mention of the six days of creation. They make it quite clear in [their web site](#) that these days are what we call “days” – 24-hour periods of time. If the Bible as we read it is wrong about one thing perhaps it is wrong about that too and the word “yom” really should be translated “period of time”. After all, there are 14 different meanings of “day” in English.

Enough theology, let’s talk about science. But we can’t really do that any more as our opponents have redefined the debate to be one between creationism and materialism. If they are going to suggest that their claims and “evidence” only apply in a non-material universe then we have gone beyond the concept of non-overlapping magisteria and into the realm of fantasy and fairy tale. Anything can happen in a

fictional universe, but science operates in a real universe. To redefine the debate as not being about science but about material existence has a technical name known to even children in the earliest years of school. It is called “running away”.

There are many lists of logical fallacies on the Internet, and I would like to spend the remainder of my 1500 words identifying as many fallacies as I can in the creationists' arguments.

There's *ad hominem*, of course, where my opinions are attributed to my atheism and we are all “long-standing public anti-creationists”, plus the special case of *ad hominem tu quoque* because Ken Smith should know better, being a “committed Christian”; there is massive Appeal to Authority (*ad verecundiam*); there's Appeal to Belief (a lot of people believe in creationism and they can't all be wrong) which segues nicely into Appeal to Common Practice; there's Appeal to Consequences of a Belief, because people who reject creationism are going to Hell; Appeal to Emotion is there for people who just feel bad about evolution; Appeal to Fear (*ad baculum*) is there because evolution apparently threatens Christian faith (it doesn't); *ad populum*, an Appeal to Popularity, is in there as if science is some sort of plebiscite.

There's the old Appeal to Ridicule, where evolutionists (whatever they are) are presented as poor, deluded fools who wouldn't know a fact if it jumped off the page of a holy book at them; there's the Appeal to Spite (evolutionists just do this because they don't like God); needless to say there is Appeal to Tradition; there's the Bandwagon fallacy, where scientists just agree with evolution because it makes life easier; could there be a better example of Begging the Question than “God must exist because it says so in the Bible, which was written by God”; the Burden of Proof is placed on evolutionists to prove that creation didn't happen; there's the False Dilemma, where the truth of creationism is claimed if evolution can be seen to be flawed; the exquisitely named Genetic Fallacy appears when the Bible is given as the source and it is assumed to be true.

Red Herrings are all over the place (except, perhaps, fossilised at Canowindra as evidence of a mass extinction not caused by a flood), and we are all on the Slippery Slope to Hell as evolutionists have no moral compasses; Special Pleading lets creationists change a debate by saying that it is unfair to expect them to provide evidence because they aren't materialists; Straw Men are everywhere, such as those scientists who say that the universe has been around forever and that Darwin person who admitted that transitional fossils would be hard to find.

That should be enough, and I would like to acknowledge that the list I used came from [Ken McVay's Nizkor Project](#). There are more fallacies in the list, but space is limited and some had to be left out.

I will finish by paraphrasing from my original statement.

This debate is really about the evidence for two of the many possible scenarios about the origin of what we see around us today. I will repeat that these are only two of many possibilities. Refuting one does not automatically make the other one correct, so what is required is to evaluate the evidence for both and to compare the evidence to

see which more accurately describes reality and what else is known about how the universe works.

Science expects a theory to be testable, falsifiable and corrigible. The theory of evolution is all three. Creationism is none of the three. The evidence for evolution is overwhelming. The evidence for special creation is non-existent.

And this, from our second statement: where is that evidence for a 6,000 year old Earth? Evidence that cannot be dismissed by Occam's Razor.