

# Disclosure

of things evolutionists don't want you to know

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## DINOSAUR DELUSIONS

*Everyone "knows" something different about dinosaur evolution.*

This article was inspired by two recent articles in the scientific literature about the metabolism of dinosaurs and the rate at which they evolved into birds. But before we start talking about dinosaur evolution, let me admit my personal bias on the subject, and why I can't really take these stories too seriously.

On Christmas morning, 1954, I found an A.C. Gilbert chemistry set under the tree. I don't still have that chemistry set (I wish I did!); but I am sure that if I repeated its experiments today, the results would still be the same as they were 60 years ago. What was true about chemical reactions then is still true today.

In those days, I also had lots of plastic dinosaurs. I knew all their names, and everything about them. I knew dinosaurs were stupid, slow, scaly cold-blooded reptiles. Kids today know that dinosaurs are smart, agile, hot-blooded feathered birds. It is amazing how much dinosaurs have evolved in just the past 60 years! ☺

### PROGRESSIVE TRUTH

Evolutionists are quick to point out that "truth is progressive." Yes, that's true. Modern oscilloscopes are much more capable than the one I built in 1960; but my 1960 oscilloscope still works (as you can see in our *Evolution for Intellectuals* video <sup>1</sup>). In real science, truth progresses as additional information is learned—but old truth is still true. Our knowledge of chemical reactions today greatly exceeds what the most brilliant chemist knew in 1954—but there's nothing in a 1954 college chemistry textbook that isn't true any more.

Opinions, on the other hand, do change. For

example, the ACLU defended John Scope's right to teach this "truth."

**The Races of Man.** - At the present time there exist upon the earth **five races** or varieties of man, **each very different** from the other in instincts, social customs, and, to an extent, structure. These are the Ethiopian or negro type, originating in Africa; the Malay or brown race, from the islands of the Pacific; the American Indian; the Mongolian or yellow race, including the natives of China, Japan, and the Eskimos; and finally, **the highest type of all, the Caucasians**, represented by the civilized white inhabitants of Europe and America. [emphasis supplied] <sup>2</sup>

Was it really a true, scientific fact that in 1914 the Caucasian race was the highest type of all human races? Or was that just an opinion?

With that in mind, do we really know much about dinosaurs—or are we deluding ourselves?

### BIRDS OR REPTILES?

There was a time, not too long ago, when everyone knew dinosaurs were reptiles. But that changed at the end of the 20<sup>th</sup> century when Dr. Robert T. Bakker threw down the gauntlet by ending his dinosaur book with these two paragraphs:

As long as textbooks and museum labels unreflectively repeat the message, "Dinosaurs are reptiles," it will be difficult to establish an intelligent debate about the true nature of dinosaur adaptations. Some of the orthodox paleontologists act as though dinosaurs must be assumed cold-blooded until their warm-

<sup>1</sup> <http://www.scienceagainstevolution.info/video/efi.wmv>

<sup>2</sup> Hunter, *Civic Biology*, 1914, the book Scopes was accused of using.

bloodedness is proved beyond any reasonable doubt. That is at least highly unscientific. And it certainly represents “argument by definition”—dinosaurs are reptiles, reptiles are cold-blooded, therefore dinosaurs are cold-blooded.

A truly scientific skeptic would start by assuming neither cold-bloodedness nor warm-bloodedness, and then reevaluate the evidence without prior terminological bias. So as long as the Dinosauria remain stuck in the Class Reptilia, this type of analysis is nearly impossible. Let dinosaurs be dinosaurs. Let the Dinosauria stand proudly alone, a Class by itself. They merit it. And let us squarely face the dinosauriness of birds and the birdness of Dinosauria. When the Canada geese honk their way northward, we can say, “The dinosaurs are migrating, it must be spring.”<sup>3</sup>

Bakker seems to us to be guilty of the crime he opposes. He wants to define geese as dinosaurs, therefore dinosaurs must be birds. Why not, as he suggests, let reptiles be reptiles, birds be birds, and dinosaurs be dinosaurs, each in a class by itself?

## ARBITRARY CLASSIFICATION

Bakker certainly is correct to recognize that classification is purely arbitrary, based on prevailing opinion. If the “feathered dinosaurs” discovered in China had been discovered in the 19<sup>th</sup> century, they no doubt would have been classified as birds because (duh) only birds have feathers. How do we know those feathered fossils aren’t the fossils of extinct birds—no dinosaurs? We don’t.

## HOT OR COLD?

When dinosaur bones are dug up, they are the same temperature as the dirt they came out of. Therefore, one cannot measure the body temperature of the dinosaur directly—one must infer body temperature. Inference is nothing more than an educated guess. Inference isn’t as reliable as direct observation.

Here’s a summary of the debate:

Paleontologists have struggled for 50 years to determine whether dinosaurs were cold-blooded ectotherms like today’s reptiles, making little effort to control their body temperatures, or [warm-blooded] endotherms, like most modern mammals and birds, which keep their body temperatures at a constant, relatively high set point. The answer greatly influences our

view of dinosaurs, as endotherms tend to be more active and faster growing.

...  
For the first 150 years after their discovery, dinosaurs were considered ectotherms like today’s reptiles. Ectothermy makes some sense: “It requires much less energy from the environment,” explains Roger Seymour, a zoologist at the University of Adelaide in Australia. But it has drawbacks, too: “The animal cannot feed in cold conditions and has a much more limited capacity for sustained, powerful activity, even if warmed by the sun,” he says.

Beginning in the late 1960s, researchers put forward the then-heretical idea of dinosaurs as endotherms, and evidence for this has accumulated. Annual growth rings in dinosaur bones suggest fast, energy-hungry developmental rates. Birdlike air sacs may have boosted their respiratory efficiency, suggesting rapid movements. And isotopic data from fossils suggest higher body temperatures (*Science*, 22 July 2011, p. 443).

Giant endotherms pose their own puzzles, however, such as the huge quantities of food needed to sustain them. An endothermic *Tyrannosaurus rex* “would probably have starved to death,” Grady says.<sup>4</sup>

Originally, it was inferred that dinosaurs had to have been cold-blooded because they were so big they could not possibly eat enough food to nourish their huge bodies. Although not mentioned in the quote above, there is also a “heat shedding” problem with large warm-blooded animals. Big warm-blooded animals produce lots of internal heat when moving, with proportionally less surface area to allow that heat to escape. (Elephants have big ears, which act as radiators, and hippos spend lots of time in cool water for this reason.) Therefore it was logically concluded that dinosaurs could not have been warm-blooded.

On the other hand, it was inferred that dinosaurs had to have been warm-blooded because a large cold-blooded animal could not absorb enough heat from the environment to remain active, especially in cold weather. Snakes are long and skinny because that shape provides a better surface-to-volume ratio than any fat dinosaur shape. Therefore it was logically concluded that dinosaurs could not have been cold-blooded. But they had to have existed because their bones are real, so they must have been one or the other. What’s the right answer?

<sup>3</sup> Bakker, *The Dinosaur Heresies*, Zebra Books, 1986, page 462.

<sup>4</sup> Balter, *Science*, 13 June 2014, “Dinosaur metabolism neither hot nor cold, but just right”, pp. 1216-1217, <http://www.sciencemag.org/content/344/6189/1216.full>

It is a matter of opinion, which has changed over time.

### WHAT'S IN A NAME?

As we have already mentioned, dinosaur names reveal a bias. When I was a child, the two best-known dinosaurs were *Brontosaurus* and *Tyrannosaurus rex*, both of which were (as their names implied) slow, cold-blooded lizards.

He [Othniel Charles Marsh] named the new species *Brontosaurus excelsus*, meaning "thunder lizard", from the Greek *brontē/βροντή* meaning "thunder" and *sauros/σαυρος* meaning "lizard", and from the Latin *excelsus*, "highest, sublime", referring to the greater number of sacral vertebrae than in any other genus of sauropod known at the time.

The finds—the largest dinosaur ever discovered at the time and nearly complete, lacking only a head, feet, and portions of the tail—were then prepared for what was to be the first mounted display of a sauropod skeleton, at Yale's Peabody Museum of Natural History in 1905. The missing bones were created using known pieces from close relatives of *Brontosaurus*. Sauropod feet that were discovered at the same quarry were added, as well as a tail fashioned to appear as Marsh believed it should, as well as a composite model of what he felt the skull of this massive creature might look like. This was not a delicate *Diplodocus*-style skull (which would later turn out to be more accurate), but was composed of "the biggest, thickest, strongest skull bones, lower jaws and tooth crowns from three different quarries", primarily those of *Camarasaurus*, the only other sauropod for which good skull material was known at the time. This method of reconstructing incomplete skeletons based on the more complete remains of related dinosaurs continues in museum mounts and life restorations to this day. In 1979, two Carnegie researchers replaced the skull on the museum's skeleton with the correct head found in a quarry in Utah in 1910.<sup>5</sup>

So, technically, *Brontosaurus* never existed. It was really mostly *Apatosaurus* bones with a *Camarasaurus* skull. All of them were "saurus."

Historically, museums have not been as forthcoming as we might wish when it comes to distinguishing which parts of the skeleton were found *in-situ*, and which parts are assumed to have existed, but were not found. Of course, all of the paintings are artists' conceptions, which may or may not be accurate.

The movie *Jurassic Park* came out in 1993 (21 years ago) so, today, every high school student has lived his or her entire life with the image of a *Velociraptor* firmly in mind.

*Velociraptor* (commonly shortened to "raptor") is one of the dinosaur genera most familiar to the general public due to its prominent role in the *Jurassic Park* motion picture series. In the films it was shown with anatomical inaccuracies, including being much larger than it was in reality and without feathers.<sup>6</sup>

The original meaning of the word "raptor" was, "bird (such as an eagle or hawk) that kills and eats other animals for food."<sup>7</sup> But now, because of the movie, the second definition for "raptor" is, "a small or medium-sized dinosaur that ate other animals."<sup>8</sup>

Because dinosaurs are now commonly assumed to be birds, the recently discovered feathered dinosaurs tend to have names containing the word "raptor" rather than "saurus." Their names imply warm-bloodedness.

### IS THAT YOUR FINAL ANSWER?

So, what's the truth? Were dinosaurs cold-blooded reptiles or warm-blooded birds? Here's what the experts now say,

Were dinosaurs ectotherms or fast-metabolizing endotherms whose activities were unconstrained by temperature? To date, some of the strongest evidence for endothermy [warm-bloodedness] comes from the rapid growth rates derived from the analysis of fossil bones. However, these studies are constrained by a lack of comparative data and an appropriate energetic framework. Here we compile data on ontogenetic growth for extant and fossil vertebrates, including all major dinosaur clades.

Our results find that mass-independent growth rates in dinosaurs were intermediate to, and significantly different from, those of endothermic and ectothermic taxa (table S2). Although some dinosaur growth rates overlap with high-power ectotherms or low-power endotherms, they cluster closest to energetically and thermally intermediate taxa, such as tuna.<sup>9</sup>

How long is it going to take the general public

<sup>5</sup> <http://en.wikipedia.org/wiki/Brontosaurus>

<sup>6</sup> <http://en.wikipedia.org/wiki/Velociraptor>

<sup>7</sup> <http://www.merriam-webster.com/dictionary/raptor>

<sup>8</sup> *ibid.*

<sup>9</sup> Grady, *et al.*, *Science*, 13 June 2014, "Evidence for mesothermy in dinosaurs", pp. 1268-1272, <http://www.sciencemag.org/content/344/6189/1268.full?sid=7e54c5b2-3efc-4c7a-ab3f-0383a14b2bf8>

to accept the idea that dinosaurs were not cold-blooded lizards or warm-blooded birds of prey, but were actually tepid-blooded fish? ☺

## SIZE MATTERS

Of course, there is an obvious size and weight difference between dinosaurs and birds.

Most paleontologists agree that birds are descended from dinosaurs. How did such large terrestrial or aquatic animals evolve into small feathered fliers? Lee *et al.* used two large databases of theropod morphology to explore possible evolutionary patterns that may have driven this dramatic transformation (see the Perspective by Benton). They found no clear pattern of miniaturization across the entire clade of Theropoda. However, several lines of evidence suggested that the lineage leading to birds underwent sustained miniaturization. Within that lineage, body sizes decreased and species evolved faster. They also developed ecological and morphological innovations linked to smaller body sizes.<sup>10</sup>

Dr. Lee and his colleagues went looking for an explanation of how big, heavy dinosaurs could have evolved into little, light birds. “They found no clear pattern.” Could that be because it didn’t happen? Perish that unthinkable thought! ☺

Such a big change happened in such a short time! That proves “species evolved faster.” (Or, maybe it proves that it didn’t happen at all.)

Because birds live different kinds of lives in different environments than dinosaurs did, they “developed ecological innovations” in order to survive there. Because birds are smaller than dinosaurs, they had to evolve “morphological innovations” in order to survive.

In other words, “It happened because we think it happened.” That’s not science!

Birds evolved from dinosaurs, but how long did this evolutionary transition take? Twenty years ago, it was widely assumed that the first bird—*Archaeopteryx*, which lived in the Late Jurassic (see the photo)—evolved its feathers, wings, and ability to fly within just 10 million years or so. Since then, it has become clear that most of the 30 or more characteristics that distinguished the small, flying *Archaeopteryx* from ground-dwelling, carnivorous dinosaurs (theropods) emerged much earlier. On page 562 of this issue, Lee *et al.* provide evidence for

sustained miniaturization for 50 million years before *Archaeopteryx* evolved (see the graph).<sup>11</sup>

Nevertheless, there remain many intriguing questions regarding size and anatomical evolution along the bird stem lineage. Theropods were typically large to gigantic, but small body size characterized all taxa near the origin of forewing-powered flight in birds.<sup>12</sup>

Our study quantifies rates of evolutionary innovation in dinosaurs using 1549 (data set 1) and 421 (data set 2) skeletal and other anatomical traits distributed across the entire body. A clear pattern emerges: Branches along the bird stem undergo substantially faster morphological evolution than those of the rest of the tree.<sup>13</sup>

In other words, the evolutionary change in size from *T. rex* to hummingbird happened a lot faster than the rate of normal evolution! Really? It took a huge grant of money to a team of PhDs to figure that out? And what really is the evidence? The evidence is nothing more than the fact that birds today are smaller than prehistoric dinosaurs coupled with the unwarranted assumption that birds evolved from dinosaurs.

Earlier in this essay we said, “there’s nothing in a 1954 college chemistry textbook that isn’t true any more.” We did not (and could not) say, “there’s nothing in a 1954 dinosaur book that isn’t true any more” because the “truth” about dinosaurs is changing all the time.

Email

## NONSENSUS

*Non-sen-sus: an incorrect conclusion reached by a group of scientists.*

We aren’t the only ones who have noticed that science is no longer science. Victoria and Ryan noticed it, too. Both of them sent us emails this month to say so.

Dear Do-While Jones,  
I was looking at some TED Talks and came across this one which discussed, as the name implies, why we should trust science.  
[http://www.ted.com/talks/naomi\\_oreskes\\_why\\_](http://www.ted.com/talks/naomi_oreskes_why_)

<sup>11</sup> Benton, *Science*, 1 August 2014, “How birds became birds”, pp. 508-509,  
<http://www.sciencemag.org/content/345/6196/508.full>

<sup>12</sup> Lee, *et al.*, *Science*, 1 August 2014, “Sustained miniaturization and anatomical innovation in the dinosaurian ancestors of birds”, pp. 562-566,  
<http://www.sciencemag.org/content/345/6196/562.full>

<sup>13</sup> *ibid.*

<sup>10</sup> Vignieri, *Science*, 1 August 2014, “Turning large dinosaurs into small birds”, p. 526,  
<http://www.sciencemag.org/content/345/6196/526.2.full?sid=f2bacd9e-ed1d-4632-b4b4-e7a64768d7cd>

we should believe in science

It kind of lead [sic] me on a search to find the definition of science and I was surprised that there were several broad definitions that fit better with hers and paid no attention to the scientific method. The speaker basically says, in short, that the scientific method is flawed and consensus is a much more accurate way of conducting science and determining fact. Her third point at about 9:30 against the scientific method is that many sciences don't fit it. I kind of thought the scientific method determined what was considered science (am I wrong?). Wasn't it how we were supposed to go about experimenting things, and if it didn't work with that method, then it really wasn't science? Now all of a sudden it doesn't matter anymore? Science is defined by whatever we decide are sciences, whether it be physics, or evolutionary biology, or astrology? If the scientific method has been thrown out the window, what constitutes science? Who says what it is?

And wasn't the point to eliminate bias? Doesn't consensus bring back everything that the scientific method was supposed to avoid?

It is all very confusing. But I guess it would be funny in a bad way if evolution got to be more largely accepted as science because the definition of science changed.

Victoria

Ryan made up three "crazy theories" to illustrate the flawed arguments of some modern scientists. Unfortunately, his email is so poorly written it was too hard to correct. Here is what he actually wrote, followed by our explanation of what he was trying to say.

I have come to the conclusion that scientist and atheist both no longer deserve their titles. Scientist no longer apply the skepticism to their favorite theories not just evolution. Atheists do believe in God to them evolution is God. Evolution has become their religion. They have purposely made it unfalsifiable, and then made strawman arguments of what would falsify it. Statements such as "if rabbits were found in the Precambrian" with out even giving a thought to the fact that if a rabbit is found the rock is never thought to Precambrian. Second when the tree of life is questioned exceptions to the rules.

Examples would be Homology: animals with like traits are related, Convergent Evolution: animals with like traits are not related, and finally Re-evolution and Atavism: why traits disappear and reappear in a animals lineage at random.

With these three mechanisms I could construct my own I independent life-trees. None of which could be proven wrong. I will provide three loony theories and evidences for them to prove my point.

1. Dolphins are the ancestors to all mammals. Dolphins evolved from ichthyosaurs. Dolphins then evolved into wolves which then diversified into modern mammals.

There are proofs of this 1. Is that fossil evidence has found that ichthyosaurs gave live births. 2. Is that ichthyosaurs and dolphins are nearly identical. 3. Ichthyosaurs evolved from lizard-like dinosaurs meaning that it would be warm blooded because dinosaurs were warm blooded. 4. We now believe that wolf-like mammals evolved into dolphins, we could have got it backwards.

[second two theories deleted]

All three of my theories are crazy, but

can't be proven wrong. Worse is that if a famous biologist like Richard Dawkins came up with these ideas they would be accepted within three years time.

Ryan

Ryan's first point is that science has been replaced by faith rather than experimentation in many cases. In particular, some scientists accept the theory of evolution, not because of experimental data and observation, but in spite of the experimental data and observation, because of the theological implications.

Like Ryan, we have heard evolutionists argue, "If a fossilized rabbit is found in the Precambrian layer, it would disprove evolution." But, we also know that many "out of place artifacts" have been found, and ignored.

Ryan has noted that the "tree of life" has many inconsistencies incompatible with the theory of evolution. We first mentioned some of the discrepancies between DNA analysis and traditional classification in 1999,<sup>14</sup> and again in 2001.<sup>15</sup> The most recent examples we have published had to do with DNA studies which suggest unrelated birds are closely related, electric fish that are surprisingly classified in unrelated families, and the evolutionary problems posed by radically different nervous systems.<sup>16</sup>

Ryan notes that homology is assumed to be the result of common ancestry, so things that look similar are assumed to have a close common ancestry. When this ancestry is inconsistent with other evolutionary assumptions, "convergent evolution" is invoked as the reason why unrelated creatures are so similar. They both supposedly converged on the same survival strategy independently. Physical traits are believed to evolve, be lost, and then re-evolve as needed. This is wishful thinking—not science!

Ryan presents three loony theories which actually make more sense than the loony theories evolutionists believe. We deleted the second two to save space, and because they were redundant.

Ryan's first loony theory was based on the fact that evolutionists believe that a wolf-like creature evolved into the first whale. (They believe this because a skull was found with an ear bone like a

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<sup>14</sup> Disclosure, July 1999, "The DNA Dilemma", <http://www.scienceagainstevolution.info/v3i10f.htm>

<sup>15</sup> Disclosure, November 2001, "Fuzz, Birds, and DNA"

<http://www.scienceagainstevolution.info/v6i2n.htm>

<sup>16</sup> Disclosure, June 2014, "Jellyfish, Kiwis, and Moa", <http://www.scienceagainstevolution.info/v18i9f.htm>, Disclosure, July 2014, "Shockingly Fishy Conclusions"

<http://www.scienceagainstevolution.info/v18i10f.htm>

whale's ear bone, so the fossil was classified as a whale. Later, when the rest of the skeleton was found, it turned out to be a wolf-like land animal. But, since it was already classified as a whale, and since the fossil was dated to be older than any whale fossil known at the time, it was assumed to be a whale ancestor.) Because wolf-to-whale evolution is touted as one of the best examples of evolution, there is little chance that evolutionists will ever walk back from it.<sup>17</sup>

Ryan's argument is that it makes much more sense to believe that a whale-like creature evolved into the first wolf. That is, an aquatic dinosaur (an ichthyosaur, for example) made the transition from reptile to mammal by evolving mammary glands to nourish live young, and warm-blooded metabolism. Then this aquatic mammal evolved into the first land mammal. But, Ryan points out, there is no scientific way to prove or disprove either theory.

As Victoria pointed out, in this case experimentation and actual observation don't matter. All that matters is if more evolutionists believe that a wolf-like creature evolved into a whale-like creature than believe that a whale-like creature evolved into a wolf-like creature. Evolutionists call it "consensus." We call it "nonsensus."

Ryan's second two loony theories are similar, so we omitted them. All three make the point that if one isn't bound by experimentation and observation, one can make up any story about how anything happened, and call it "science." If Ryan can make up a more plausible story, it doesn't matter if another story is too strongly entrenched in the "scientific" community (because Richard Dawkins said it).

## Evolution in the News

# UNDISCOVERED PLANETS

*Two habitable planets discovered outside our solar system have been un-discovered.*

It isn't just the "truth" about dinosaurs that change on a daily basis—planets do too!

<sup>17</sup> For more detailed discussions of whale evolution see *Disclosure*, August 1999, "In A Whale of Trouble", <http://www.scienceagainstevolution.info/v3i11f.htm>, and *Disclosure*, November 2001, "Whale Tale Two", <http://www.scienceagainstevolution.info/v6i2f.htm>

Two planets considered among the most promising for life outside the solar system don't exist, scientists report July 3 in *Science*. The signals embedded in starlight that were attributed to the planets may instead have been caused by the changing magnetic activity of their star, Gliese 581.<sup>18</sup>

Some of the first exoplanets identified as candidates for habitable worlds turn out to be mirages conjured up by magnetism on their host star.

Earlier studies looked at tiny changes in the motion of the star Gliese 581 and concluded that at least five planets must circle it. Of these, two planets, dubbed GJ 581d and GJ 581g, were thought to be at a distance that would allow liquid water to exist on their surface. But a team led by Paul Robertson of Pennsylvania State University in University Park studied emissions from hydrogen in the star's spectrum and discovered magnetic disturbances within Gliese 581.

These magnetic changes, as they rotate around the star, mimic the signal an exoplanet would produce, and probably misled the earlier researchers.<sup>19</sup>

Both reference a very technical report in the journal, *Science*, in which the authors said,

We assert that the periodic RV [Doppler Radial Velocity] signal at 66 days is an artifact induced by the stellar rotation rather than an exoplanet.

...  
GJ 581d [planet "d" circling star Gliese 581] and (the now less widely believed to exist) GJ 581 g [planet "g" circling star Gliese 581] were considered to be among the first exoplanets likely to host habitable environments if they were rocky. ... Although GJ 581 may still be dynamically capable of accommodating terrestrial-mass planets in its HZ, we see no evidence at this time for additional planets in the activity-corrected residuals around our three-planet model [which does not include planets d and g].<sup>20</sup>

<sup>18</sup> Grant, *Science News*, 9 August 2014, "Habitable planet's reality questioned", <https://www.sciencenews.org/article/exoplanets-once-trumpeted-life-friendly-may-not-exist>

<sup>19</sup> *Nature*, 10 July 2014, "The exoplanets that were not", Page 128, <http://www.nature.com/nature/journal/v511/n7508/full/511128b.html>

<sup>20</sup> Robertson, *et al.*, *Science*, 25 July 2014, "Stellar activity masquerading as planets in the habitable zone of the M dwarf Gliese 581", pp. 440-444, <http://www.sciencemag.org/content/345/6195/440.full?sid=012de3cc-7da1-4fe8-8c4a-a3ebbe7a3d2a>

## BACK TO THE BEGINNING

The story began in 2007 with this report in the respected journal, *Science*.

For the first time, astronomers have found an Earth-like planet that could be habitable. Like an oasis in space, the rocky world, possibly covered with oceans, orbits a puny red dwarf star just over 20 light-years away in the constellation Libra.

... the new planet, found by Stéphane Udry of Geneva Observatory in Switzerland and his colleagues, orbits right in the habitable zone of its mother star, Gliese 581, where temperatures are between 0° and 40°C.<sup>21</sup>

It was reported by a peer-reviewed journal, as absolute fact, not only that the planet had been discovered, but also what temperature it was. Now that the planet has been un-discovered, one has to question the temperature readings, too. ☺

These two planets are not the only planets that might not exist to have been described in the technical literature.

Several promising exoplanets have been cast into doubt in the past. The gassy giant Fomalhaut b, for instance, was hailed as one of the first exoplanets to have its picture taken – but it may be nothing more than a blob of dust. And the closest Earth-sized world to us, Alpha Centauri Bb, could just be noise in the data.<sup>22</sup>

Let me make it perfectly clear that I personally believe that it is highly unlikely that out of all of the stars in the Universe, our Sun is the only star that has planets orbiting it. In fact, I suspect that there are only a few (if any) stars in the Universe which DON'T have planets orbiting them. It seems likely to me that if whatever process (natural or supernatural) is responsible for creating the Universe created one star (our Sun) with planets around it, it would also create planets around most (or all) of the other stars.

So, I believe there are lots of planets out there orbiting other stars. BUT I don't believe any of them have actually been detected (or will be in the near future).

## STAR LIGHT, STAR BRIGHT

Nobody has actually seen a star—astronomers

<sup>21</sup> Schilling, *Science*, 27 April 2007, “Habitable, But Not Much Like Home”, p. 528, <http://www.sciencemag.org/content/316/5824/528.2.full?sid=eb861b65-a29d-47f8-ab7c-1f8be80e1283>

<sup>22</sup> Aron, *New Scientist*, 3 July 2014, “First life-friendly exoplanet may not exist after all”, <http://www.newscientist.com/article/dn25842-first-life-friendly-exoplanet-may-not-exist-after-all.html>

have just seen starlight. Sometimes they see very slight changes in color, presumably due to a Doppler shift, presumably caused by a star being wobbled by the presence of one or more heavy planets orbiting it. Sometimes they see very slight changes in intensity, presumably caused by a big planet moving between us and the star, eclipsing some of the starlight.

After working for decades on weapons designed to detect the position of targets based on radiation from them in the visible, infrared, ultraviolet, and microwave spectrum, I know from experience that one can't trust very subtle measurements.

After living for decades in the Mojave Desert, I know from experience that long-distance optical observations of mountains can fool you. I've often seen mountains wiggle like Jell-O on hot summer afternoons. But, when I hike up those mountains I discover that they are hard as rock (because they are rock). The air between me and a distant mountain distorts the light coming from the mountain making it appear to move.

Who knows what gravitational or magnetic fields are swirling around in the vast space that separates us from the stars making them twinkle, like the Earth's atmosphere makes them twinkle. The fact that starlight appears to twinkle does not mean that there are planets orbiting them.

## RESPONSIBLE JOURNALISM

So should astronomers – and the media, *New Scientist* included – be more cautious next time they trumpet an exoplanet haul?

For instance, many announcements come with eye-catching artists' impressions, but only a handful of worlds have been directly photographed, and they show up as tiny pin-pricks of light. Most exoplanets are revealed only as subtle variations in the light from their star.

"I spend my days looking at squiggles on a graph," says Robertson. "But a lot of science is publically funded, and the taxpayers who contribute to that deserve a return on their investment. I wouldn't say we should shy away from artist impressions or anything that helps us communicate the results of our work to the public."<sup>23</sup>

Taxpayers deserve to be told the truth—not fanciful stories that will make them feel good about funding non-scientific “research.”

<sup>23</sup> *ibid.*

# CREATIONISM VS. EVOLUTION: 6 BIG BATTLES

<http://www.livescience.com/43126-creationism-vs-evolution-6-big-battles.html>

*An article posted on livescience.com.*

This month's website review looks at an article that presents what that author believes are the six big battles that have been fought regarding the creation versus evolution controversy. You, the reader, will have to decide if you agree with the material as it is presented.

In the introduction, the author states that the gist of the debate between scientists and creationists is "Did modern life on Earth evolve over millions of years, or was it created in the blink of an eye by God?" The statement then is made that "the scientific evidence is clear: The Earth is about 4.5 billion years old, and all life evolved from primitive, single-celled organisms." No scientific evidence is presented to support this claim.

The six battles mentioned in the title of the article are: 1) The Birth of the Battle (which talks about the advances in geology in the 1700s and 1800s and Charles Darwin's *The Origin of Species*); 2) The Scopes Monkey Trial; 3) U.S. Gets Serious About Science (which says that "teaching of evolution versus creationism was spotty until 1958," the year when Sputnik satellite was launched); 4) Court Battles Continue (spotlighting the Epperson v. Arkansas case in 1968); 5) All Eyes on Dover (about the Kitzmiller v. Dover case in 2005); and 6) Bill Nye vs. Ken Ham (the three-hour debate of 2014).

What I find interesting about this article is that it is typical of much you find on the Internet from writers that support evolution. They want you to accept evolution as a proven fact without requiring any evidence. The school textbooks support evolution, so it must be the correct view.

At the bottom of the article you will find an author bio and 166 comments from various readers. All this material makes for interesting reading. The controversy between creation and evolution indeed is still alive and very active.

Just remember it is important to understand the issues involved in the ongoing controversy. Many times people cannot agree on basic definitions of EVOLUTION and CREATIONISM. Always look for evidence to determine whether something is true or not.



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**Disclosure**, the Science Against Evolution newsletter, is edited by R. David Pogge.

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