

# Disclosure

of things evolutionists don't want you to know

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## U-SERIES CORRECTION

*The numerical values have changed, but the conclusion hasn't.*

We want to correct a data discrepancy in last month's feature article. <sup>1</sup> The numerical correction makes our argument even more compelling than it was before. But rather than just give you a new set of numbers, let us tell you the behind-the-scenes story of how that article came about, and the surprising reason why the error wasn't detected sooner.

### IN THE BEGINNING

It all began when John Livingston sent me an email asking how uranium series dating was used to date some cave paintings in a technical article published in the professional journal *Science*. <sup>2</sup> John had done some research into the method and could not reconcile some of the statements in the article with other facts he had found on the Internet. As I was composing the email response to him, it occurred to me that the method could not possibly work if the Earth has existed for more than 2 million years. After 2 million years, the ratio of <sup>234</sup>U to <sup>238</sup>U should be 0.0000553 everywhere uranium is found. But the data in the cave painting article showed that was not the case. The article said that the ratio of <sup>234</sup>U to <sup>238</sup>U is much higher than that, implying that the Earth is much younger than 2 million years old.

Since John was clearly smart enough to ask the initial question about the method, and found pertinent data on the Internet, I asked him to review the article before I published it. He found no errors.

I also sent the article to a retired engineer who

is the most brilliant mathematician I know. He is an atheist who loves to make fun of creationists. Not only that, at one point in his career he was employed at a highly respected weapons laboratory, working on a project that depended upon a correct understanding of nuclear reactions (to put it discreetly). If anyone could find an error in my work, I was sure he could; and he certainly would not be shy about telling me about it! He was unable to find any errors in my calculations.

Despite this, I still had a nagging feeling of uncertainty because the theoretical numbers in my calculations differed so much from the published data. Doubts plagued John, too, as you will see later from the email he sent me.

After the article appeared, we got an email from someone whose first name really is Darwin, with similar doubts. So, I checked my calculations again and again, but I still could not find the error.

### MISLABELED DATA

Eventually, I realized that I was looking for the error in the wrong place. The error was in the peer-reviewed published data. The column heading in Table S-1 of the supplemental data was "<sup>234</sup>U/<sup>238</sup>U", but the numbers actually represented " $(d^{234}\text{U}/dt)/(d^{238}\text{U}/dt)$ ". This was obscurely stated in the caption for the table.

Isotopic ratios are given as activity ratios, errors are at  $2\sigma$ . <sup>3</sup>

This means that the theoretical value should be 1.0, not 0.0000553. But the values ranged

<sup>1</sup> *Disclosure*, July 2012, "U-Series Dating", <http://scienceagainstevolution.info/v16i10f.htm>

<sup>2</sup> Pike, *et al.*, *Science*, 15 June 2012, "U-Series Dating of Paleolithic Art in 11 Caves in Spain", pp. 1409-1413, <http://www.sciencemag.org/content/336/6087/1409.full>

<sup>3</sup> Pike, *et al.*, *Science*, 15 June 2012, "Supplementary Materials for U-Series Dating of Paleolithic Art in 11 Caves in Spain", <http://www.sciencemag.org/content/suppl/2012/06/13/336.6087.1409.DC1/Pike.SM.pdf>

from  $0.7366 \pm 0.0018$  to  $7.857 \pm 0.014$ . So, the measured values still aren't what they should be if the Earth is older than 2 million years. They range from 74% of what they should be to 786% of what they should be. That's not as great as we originally reported, but still grossly inconsistent with what the Old Earth Model would predict. Furthermore, the fact that some values were less than 100% raises new questions about the assumptions used in the dating method.

## THE AUTHOR'S RESPONSE

I was interested in what the primary author of the cave painting article thought, so I sent him this email, which quoted John's and Darwin's emails.

Dr. Pike,

We reviewed your article, "U-Series Dating of Paleolithic Art in 11 Caves in Spain," in our July newsletter. Our commentary, found at <http://scienceagainstevolution.info/v16i10f.htm>, prompted questions from two of our readers. Rather than try to explain what we think you meant, we would appreciate it if you would clarify the confusion yourself, preferably at an undergraduate level. Both emails are attached to the end of this email; but here is a summary of their comments.

1. Darwin and I had different understandings of what you meant when you said, "Our U-series ages ranged from 0.164 to 40.8 ky." Specifically, to what measurements were you referring?

2. In Table S1 we failed to notice that the  $^{234}\text{U}/^{238}\text{U}$  ratios are given as activity ratios, not isotope ratios. Therefore the expected value at equilibrium would be 1, not 0.0000553. But the question remains, what are the "natural disturbances" that cause the disequilibrium? Is there any evidence, other than the disequilibrium itself, that the ratios are naturally disturbed?

Sincerely,

R. David Pogge

Darwin wrote:

Hello,

I saw your article at <http://scienceagainstevolution.info/v16i10f.htm> through a WordPress blog and I had a few questions regarding it. I am just going to copy and paste it from the comment I wrote so I apologize if some of the pronoun usage seems weird:

I haven't checked through your entire methodology so let me know if the error is addressed later on, but the first thing I have an issue with is the quotation out of context when you mention "the measurements ranged from 164 years to 40,800 years, which hardly inspires confidence in the method."

The exact quote from the Science article that you reference is:

The samples were processed and U-series isotopes measured by using the method of Hoffmann et al. (9-11). Where sampling allowed a second aliquot to be taken, we tested the integrity of the calcite by comparing the dates of the upper layers of the calcite to those closer to the painting. In all cases, the date from the deeper sample was older, supporting the reliability of our method (11). Our U-series ages ranged from 0.164 to 40.8 ky [corresponding to radiocarbon ages of near modern to 35,500 radiocarbon years before the

present (14C yr B.P.)].

What the 164 to 40,800 years is referring to is the U-series age of ALL the samples that were taken for testing, not just the ones used to date the painting. If you will notice, the paper mentions that upper layers of the calcite were dated too in addition to those closer to the painting. The point of this is to verify that the U-series dating gives correct results relative to the layer.

The actual dating of the paintings, with a lower bound based on the above layer and an upper bound based on the below layer, is given in figure 2 just below the quote (<http://www.sciencemag.org/content/336/6087/1409/F2.large.jpg>). If you notice, the actual dating ranges are much smaller than the "164 to 40800" you mentioned.

In terms of the  $^{230}\text{Th}/^{238}\text{U}$  and  $^{234}\text{U}/^{238}\text{U}$  ratio problems, I will have to look more into the cause of disequilibrium, but for now I will base my point on the causes that the paper/your article mentions. The article points out that the  $^{234}\text{U}/^{238}\text{U}$  ratio should be closer to 0.0000553, which is apparently the ideal value given no natural disturbances. However, since there are natural disturbances, what is the justification for saying that the values should be closer to 0.0000553? Also, the article points out the ratio (with disturbances), should be on either side of 0.0000553 but again I do not understand the justification for this. For example, for the  $^{234}\text{U}/^{238}\text{U}$  ratio, the article mentions that  $^{234}\text{U}$  is lighter and will dust farther in the wind. This would increase the amount of  $^{234}\text{U}$  which would increase the  $^{234}\text{U}/^{238}\text{U}$  ratio, so the higher ratio would be expected based on this fact.

I'm not quite sure I agree with the paper's correction for detritus but again, that is something I will have to read more into. I look forward to hearing your response to these points.

Best,  
Darwin

John Livingston wrote:

Let me ask you a question. I re-read the uranium article today and my understanding seems to have darkened in the last couple weeks.

What's the connection between an assumed activity ratio of 1.0 if  $^{234}\text{U}/^{238}\text{U}$  are in equilibrium, compared to the values of 0.0000553?

Why didn't we compare the activity ratios they measured (0.7366 to 7.857) to their assumed value of 1.0 instead of 0.0000553?

Sincerely,  
John

## SECOND QUESTION

Here is Dr. Pike's response to our second question:

The natural disturbance of the  $^{234}\text{U}/^{238}\text{U}$  ratio is caused primarily by alpha recoil. When  $^{238}\text{U}$  decays (through two short-lived isotopes) to  $^{234}\text{U}$  it loses some mass, and this imparts momentum to the  $^{234}\text{U}$  atom. This can damage the crystal lattice where the  $^{234}\text{U}$  is sited, making it more vulnerable to dissolution compared with  $^{238}\text{U}$ . Almost all groundwaters have  $^{234}\text{U}/^{238}\text{U}$  activity >1. Incidentally, if the earth was very young (say 6000 years), and no natural processes caused  $^{234}\text{U}/^{238}\text{U}$  disequilibrium, we would predict  $^{234}\text{U}/^{238}\text{U} \sim 0.17$ , and there are no time related phenomenon that can give a  $^{234}\text{U}/^{238}\text{U} >1$ .

Dr. Pike thinks alpha recoil causes enough crystal lattice damage to make  $^{234}\text{U}$  significantly more soluble than  $^{238}\text{U}$ . That's an interesting theory. I would like to see some experimental measurements of the relative solubility; but I can't imagine how that could be done accurately. But, let us ponder whether his unverifiable theory about solubility is even remotely plausible.

Let's imagine a rock that has some uranium in it which has been sitting around, undisturbed, for more than 2 million years, so the isotopic ratio has reached equilibrium. The crystal surrounding a  $^{234}\text{U}$  atom has been damaged enough to make the  $^{234}\text{U}$  atom more easily dissolved than it otherwise would be. It is a little bit unclear as to why this would be. Did the radioactive decay cause a crack that went from the  $^{234}\text{U}$  atom to the surface of the crystal, allowing water molecules to get it? Or did the micro-nuclear explosion break up the crystal surrounding the  $^{234}\text{U}$  atom? In either case, because the crystal has reached equilibrium, there are 18,089  $^{238}\text{U}$  atoms for every  $^{234}\text{U}$  atom, all of which would be more easily dissolved, so the ratio would not change.

Dr. Pike's argument and my argument are both philosophical arguments, not scientific arguments. You are free to believe whatever you want.

But, suppose his theory actually is true. That raises another question.

If  $^{234}\text{U}$  really is more soluble than  $^{238}\text{U}$ , why is it that "ALMOST all groundwaters have  $^{234}\text{U}/^{238}\text{U}$  activity  $>1$ ." Should not ALL groundwaters have more  $^{234}\text{U}$  than  $^{238}\text{U}$ ? Why is it that his sample O-9 had only 74% as much  $^{234}\text{U}$  as it should have? Clearly, sometimes  $^{234}\text{U}$  isn't as soluble as  $^{238}\text{U}$ . So, since relative solubility is known to be variable, how do you know the actual ratio of  $^{234}\text{U}/^{238}\text{U}$  in the water that evaporated to form the mineral deposits over the painting? You can't know. The method can't work.

He is correct that *no time-related phenomenon* can produce  $^{234}\text{U}/^{238}\text{U}$  activity  $> 1$ . But implicit in his reasoning is his assumption is that the Earth is more than 2 million years old, which gives enough time for equilibrium to be reached. **Immediately after creation, the ratio could be any value** greater than 1, or less than 1, or equal to 1. If the initial ratio of  $^{234}\text{U}/^{238}\text{U}$  was 7.857, it would still be 7.857 six thousand years after it was created.

He doesn't seem to understand that, so it is possible other people might not understand it, either. Let's explain it a slightly different way. He knows that after 2 million years, whatever amount of  $^{234}\text{U}$  that was originally created would all be gone. All the  $^{234}\text{U}$  in the world today would have to have been created by the decay of  $^{238}\text{U}$ , and the rate that  $^{234}\text{U}$  is being created by the decay of

$^{238}\text{U}$  would equal the rate at which  $^{234}\text{U}$  was being lost through radioactive decay. So, everywhere uranium is found, the rate of production should equal the rate of loss. But when he took sample O-110, he found nearly 8 times as much  $^{234}\text{U}$  as he should have, and he knows that isn't possible if the Earth is older than 2 million years because "there are no time related phenomenon that can give a  $^{234}\text{U}/^{238}\text{U} >1$ ." That means there are two possibilities. **Either the Earth is less than 2 million years old, or a non-time-related phenomenon caused the disequilibrium.** Since he can't accept the former, he is forced to believe the latter. So, he believes an unverifiable tale about crystal lattice damage causing increased solubility (which doesn't explain why the ratio is less than 1 in some places).

The most logical explanation is that whatever process (natural or supernatural) created uranium did not evenly distribute the various uranium isotopes, and there hasn't been enough time for the ratio to change. This is consistent with scientific observation of other elements. Granite rock is speckled because the minerals in it are not evenly distributed. It is an unfortunate fact of life that, despite the fact there are several gold mines within a few miles of my house, there is no gold in my back yard. Gold wasn't distributed evenly in California by whatever process created it.

Now let's address Dr. Pike's answer to our first question.

## FIRST QUESTION

Here is Dr. Pike's response to our first question about the ages ranging from 0.164 to 40.8 ky.

This is the range of the dates of formation (as determined by the U-series method) of 50 calcite flowstone samples on top of 50 different art motifs from 11 different caves in N. Spain. The large range simply reflects that flowstone can form any time after a painting was done (not as Jones insinuates that the method is somehow flawed). Indeed some flowstone can still be seen forming today (e.g. on top of modern masonry in the caves). But we know that the flowstone cannot be older than the painting underneath it, which is how we have used these dates in the context of dating the cave art.

There is nothing new here, and this isn't really of too much interest to us because we don't really care about how old the paintings are. But, consider this hypothetical scenario. Suppose someone painted something on a dry cave wall 40,000 years ago. That cave remained nice and dry for 39,000 years. But then an earthquake caused a crack in the cave ceiling, and water started to drip on it, causing a flowstone to be formed. Suppose that the U-series method really worked (although we know it doesn't). All the

method would tell us is that the painting is older than 1,000 years—not 40,000 years old. So, even if the method worked, it would not be that useful.

## CAVE DURABILITY

That got me to thinking about the durability of caves. We've been talking about limestone caverns; but there are other similar things that could be considered to be caves. Some are natural, such as lava tubes and arches. Others are not natural, such as mines, tunnels, and tombs. I've only been in one lava tube (in Iceland), and I didn't go very far in, so I don't have any real first-hand knowledge of lava tubes. But I have seen natural rock arches, and been inside mines, tunnels, and Egyptian tombs.

Rock arches don't last forever. They eventually collapse. The mines south of my home are less than 200 years old, and some are starting to fill with sand and rubble. Sometimes mines "cave-in"; but they never "cave-out." That's why the word "cave-out" doesn't even exist.

That got me to wondering, "How many new limestone caverns were born last year?" If, as geologists like to say, "The present is the key to the past," why aren't new limestone caverns forming today? Admittedly, a limestone cavern with no stalactites or stalagmites would not be a very popular tourist draw, so it would not be well-known; but it would be geologically significant, and certainly would be reported in the technical literature.

The tombs in the Valley of the Kings are less than 4,000 years old, some of them were filled nearly to their ceilings with rubble that washed into them. It took years to clean them out so they could be opened to the public. Geologically speaking, they filled with rubble very quickly.

This admittedly isn't scientific; but it is hard for me to imagine that modern mines, tunnels, and tombs will still exist 40,000 years from now. I mean no disrespect to the civil engineers who designed and built the Eisenhower Tunnel in Colorado, but I really can't imagine it being open 40,000 years from now.

Granted, the limestone caverns I've been in have been cleaned up for tourists; but they don't really look like they are 40,000 years old. A cavern that is 40,000 years old should have roughly 10 times as much rubble in it as a tomb that is 4,000 years old.

## QUESTION AUTHORITY

My point is simply that we've all been taught from the time we were little children that caves are thousands, or millions, of years old, and we tend to blindly accept that. But given the rate at which

debris fills cavities in the Earth today, it is hard to imagine caves remaining open for that long.

But, I recognize that my subjective opinion about the durability of caves is no more scientifically valid than speculation about alpha decay damaging crystals to the extent that it changes the solubility of uranium isotopes significantly. The difference is that I recognize the difference between what I think and what I know. I could be wrong. It's just my opinion about what is most reasonable, based on my observations and experience. I recognize the difference between philosophy and science.

I am disturbed that so many modern PhDs don't seem to know the difference between philosophy and science. They seem to forget, their degree is "doctor of philosophy." Their motto seems to be, "*Cogito ergo est*" (I think—therefore it is.)

Our young, budding scientists need to question everything and become convinced in their own minds about everything from string theory to chemistry. But American public schools encourage students to accept everything (especially evolution and ideological statements) without question. If scientists don't question incorrect scientific theories, they won't discover correct ones.

Email

## MASQUERADING AS SCIENCE

*Philosophy masquerading as science undermines the credibility of real science.*

This month's email has to do with the contamination of science with philosophy, destroying the credibility of science. *National Geographic* has so little credibility with me that all I believe in that magazine are the maps (and I'm skeptical of some of them—especially when they have an obvious environmental agenda behind them).

Most of the "science" programs on TV, like *Nova* on the PBS (Pure BS) network, are science fantasy rather than science. The only real science program on TV today is *Mythbusters!* Unfortunately, even *Mythbusters* was mildly infected this month.

*Mythbusters* is "real science" because it uses carefully designed experiments to determine if myths are true or not. Despite the fact that they warn, "don't try this at home," other people with sufficient resources, skill (and access to high explosives ☺), could replicate the experiments.

Sometimes the hosts are surprised at the results. In those cases, they don't fudge the results to confirm their expectations.

A notable exception to their usual impeccable scientific approach occurred in the August 13, 2012, "Jawsome Shark Special," in which "the team explores the top 25 shark myths of all time." Most of those myths have to do with things that attract or repel sharks. In every case but one, they performed experiments using real sharks in a controlled environment to confirm or deny the myth.

They failed to do any experiments on "Myth 17, *Ancient Relics*, that sharks have existed unchanged for over 400 million years." After showing 6 artists' really bizarre conceptions of what ancient sharks looked like, Jamie said, "It wasn't until about 100 million years ago that the shark shape we all know and love first evolved." They simply repeated a myth. No experiments were done. They didn't mention the fact that the artists' conceptions are based on the myth of the geologic column, and some fossilized teeth. There are no skeletal remains of sharks (other than teeth) because sharks have no bones. The body shapes in the artists' conceptions were based on nothing more than teeth!

This (almost) finally brings us to this month's email.

In 1996, I started to write a review of a book by James Trefil titled, Sharks Have No Bones--1001 Things Everyone Should Know About Science. It was full of nonsense masquerading as science. But since the book was written in 1992, it was four years old then. I didn't want to be accused of attacking an obsolete straw man. We had more current research, from more credible sources, to publish.

But I just learned from Peter that even though the book is 20 years old, it is still being sold (under a slightly different title). Here is a shortened version of what he wrote to us,

Some time ago I was a member of a book club that sent me (among others) the book "1001 Things Everyone Should Know About Science." (Science was triple underlined and the cover image was of Einstein writing on a blackboard, apparently doing the underlining.) The book's publish date is 1992, the author James Trefil. ... [A] large percentage is actual science, but of course there are bits of evo-nonsense mixed in. The book is divided into seven categories, listed below:

- Classical Biology
- Evolution
- Molecular Biology
- Classical Physical Science
- Modern Physical Science
- Earth Science
- Astronomy

The 1001 items are generally broad statements with a few paragraphs added for

explanation. For instance:

1. Plants can reproduce sexually or asexually.

...  
389. The prime optical instrument of astronomy is the telescope.

559. How a material responds to electrical forces depends on how its atoms are arranged.

658. The photon associated with ordinary visible light is about three feet long.

...  
and so on.

I read through the book and marked each item that seems to me unsupportable, opinion, philosophy (not science), or which hark back to the concept that evolution is proven.

The results are as follows:

Classical Biology-- about 22 of 168 statements

Evolution-- 72 statements (I didn't even bother marking, although I did review the material. They are all what we might call hogwash)

Molecular Biology-- 6 of 126 statements

Classical Physical Science-- 19 of 192 statements

Modern Physical Science-- all 125 statements seem to be based on actual science (!)

Earth Science-- 30 of 137 statements  
Astronomy-- 37 of 137 statements

The 186 or so statements marked indicate some problem (that I have) with the information presented, from the simply speculative -

104. Cyanobacteria account for a good deal of the oxygen and the photosynthesis that occur on the surface of the earth. [...] It is believed that cyanobacteria were the first living things on earth and that their waste product (oxygen) was partly responsible for the great change in the earth's atmosphere two billion years ago.

to questionable

479. The longest time that anyone has ever tried to measure is the lifetime of the proton -- more than  $10^{33}$  years. [the item continues] The longest time anyone has actually measured is the lifetime of the universe -- about 16 billion years.

to absurd

753. Where did the moon come from? [...he opines] If I had to make a bet right now, I suppose I would bet on the big splash theory. I wouldn't, however, bet a whole lot.

I suppose you get the picture. The actual science is interwoven with the speculative stuff and philosophy intrudes such that the scientist seems to be "pulling a fast one" in some cases.

...  
Best wishes,  
Peter

His email included many more examples, which we deleted because of space constraints.

Having read the book, too, I can confirm that Peter is absolutely right. Although I did not personally count the number of speculative, questionable, absurd statements in the book, I don't doubt his assertion that 186 of the 1001 statements are probably incorrect. Granted, that is less than a 20% error rate; but the 80% correct statements include fillers like, "The prime optical instrument of astronomy is the telescope." Is this what science has come to? Unfortunately, it is.

# THE FOUNDING FATHERS ON CREATION AND EVOLUTION

<http://www.wallbuilders.com/libissuesarticles.asp?id=7846>

*“The evolution-creation-intelligent design debate was largely formulated well before the birth of Christ”*

This month’s web site review looks at an article found on WallBuilders, which is an organization “dedicated to presenting America’s forgotten history and heroes, with an emphasis on the moral, religious, and constitutional foundation on which America was built.”

The article begins by presenting interesting details pointing out that six centuries before Christ in Greece, Anaximander (610-546 B.C.) introduced the theory of spontaneous generation; Diogenes (412-323 B.C.) introduced the concept of the primordial slime; Empedocles (495-455 B.C.) advocated the theory of survival of the fittest and of natural selection; Deomocritus (460-370 B.C.) taught about the mutability and adaptation of species.

It is interesting to learn that long before the time of Charles Darwin the principle theories and teachings of evolution were published in numerous famous writings.

The article continues by pointing out that “it is a simple fact that countless works for (and against) evolution had been written for over two millennia prior to the drafting of our governing documents and that much of today’s current phraseology surrounding the evolution debate was familiar rhetoric at the time our documents were framed.”

What makes for interesting reading is to learn the views held by our Founding Fathers regarding the question of creation versus evolution.

The views of the following Founding Fathers are presented: 1) Thomas Paine, 2) John Quincy Adams, 3) Benjamin Franklin, 4) John Adams, 5) James Wilson, 6) Daniel Webster and 7) Thomas Jefferson.

Throughout the article the author provides footnotes that a reader can use to learn more about the topics being discussed.

A longer and more extensive article on the history of evolution and the Founding Fathers that was published for Regent Lawschool on the 75<sup>th</sup> anniversary of the 1925 Scopes Monkey Trial is referenced at the end of the article and a link to it is provided. That article has the title “Evolution and the Law: A Death Struggle between Two Civilizations.”



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