

# **REVELATION AND REALITY**

*The Issue of Origins:  
Biblical, Philosophical and Scientific Perspectives  
Concerning  
The Truth about What is Real*

**Origins and Reality  
according to  
*Infallible Scripture and True Science***

Lecture #1. Foundations: The Battle of Authority

Lecture #2. The Primordial Cosmos: Part 1

Lecture #3. The Primordial Cosmos: Part 2

Lecture #4. The Young Solar System

Lecture #5. Carbon-14 Dating and True Science

Lecture #6. Deep Rocks Crush Deep Time

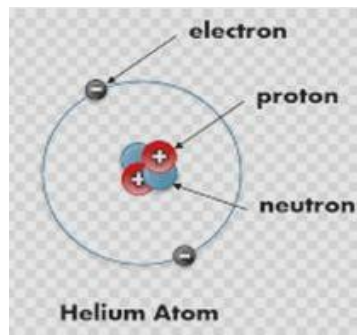
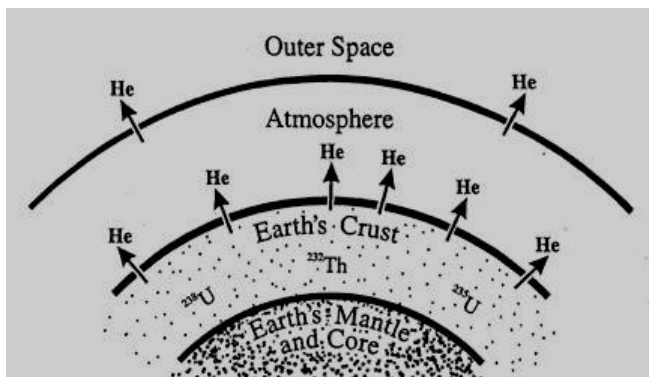
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## Helium in the Atmosphere and Rocks An Indicator of a Young Earth



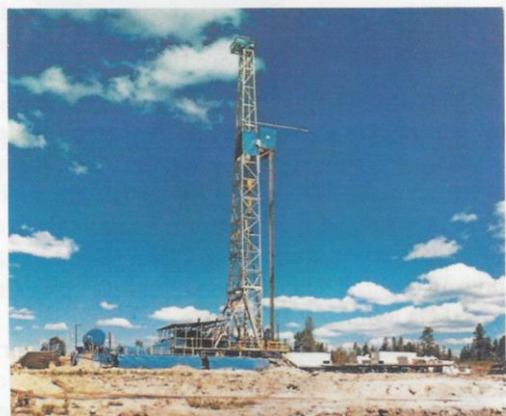
- Helium is generated by radioactive decay of heavier elements
- Helium escapes readily from rocks and through the upper crust of the earth
- Helium escapes from the upper levels of the atmosphere into space
- The atmosphere today has only  $\approx 0.05\%$  of the helium it is expected to have *IF* the earth is 5 billion years old
- Best estimates suggest that the earth and its atmosphere can only be a few *1000s* of years old

### Rational Consideration:

Radiometric dating is the foundational "scientific" pillar for the naturalist's essential doctrinaire concept of 'deep time'.

IF this pillar falls, or is proven to be unreliable,  
the scientific foundation for the prevailing paradigm  
of 'deep time' must rationally crumble.

## Helium Diffusion from Zircons An Indicator of the Age of the Earth



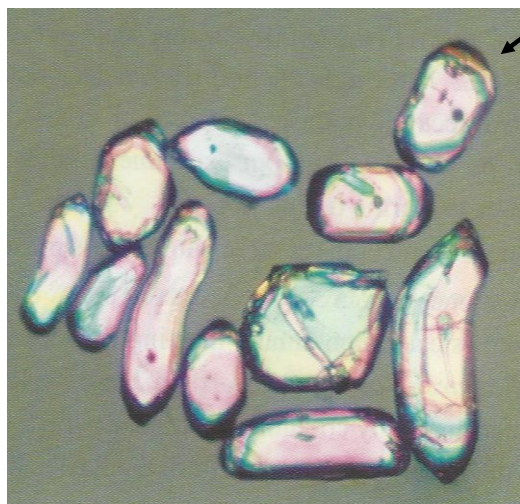
Deep drilling project at Fenton Hill, NM in 1974. Drilling penetrated through granite to a depth of 4.3 km (2.6 mi), at which depth the temperature was 313°C (595°F).

The formation at this depth was dated to be ≈ 1.5 billion years old using the lead-lead radiometric dating method.



Granite is composed of quartz, feldspar & biotite. About 5 % of granite is composed of biotite crystals (a mica).

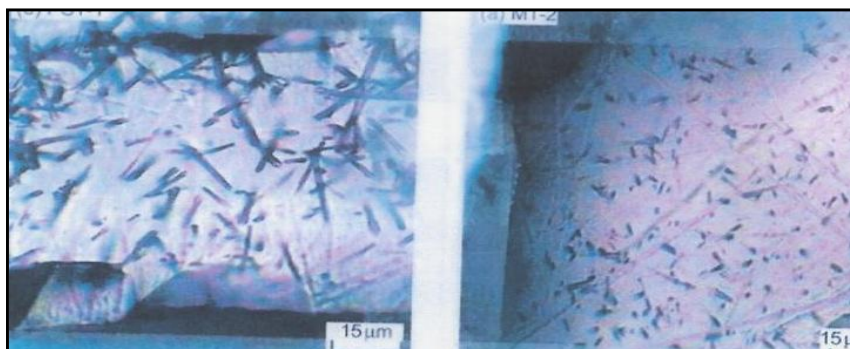
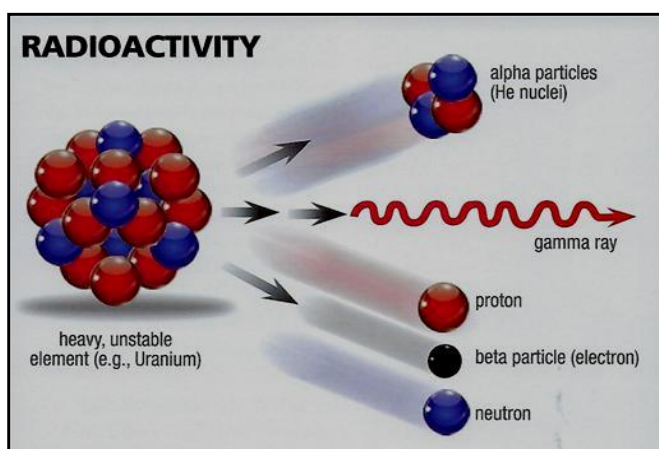
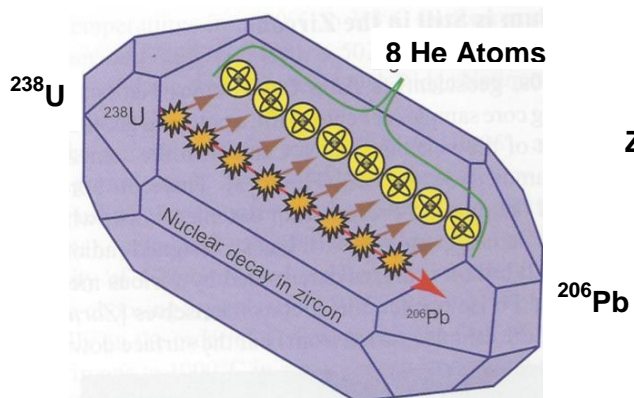
Biotite crystals contain smaller crystals of zirconium silicate → zircons (zircons – meaning “golden color”)



Zircon crystals are typically the size of a grain of sand.

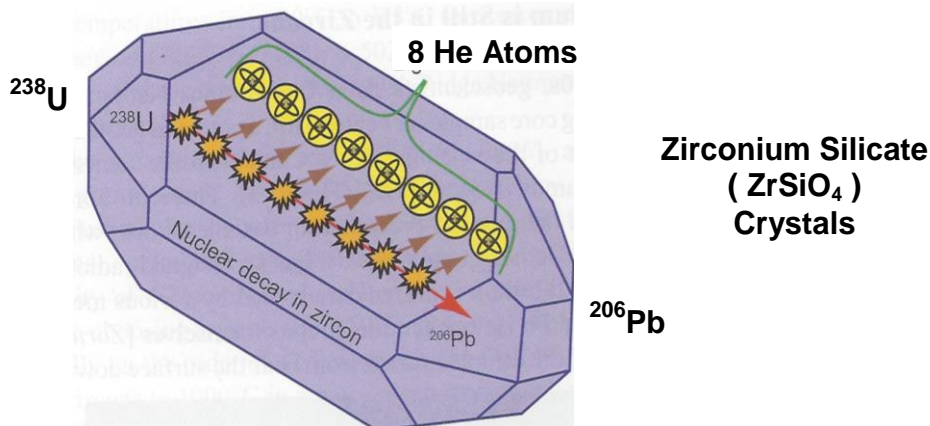
About 5 % of zirconium atoms in zircons are replaced by  $^{238}\text{U}$  or  $^{230}\text{U}$ .

$^{238}\text{U}$  or  $^{230}\text{U}$  decay radioactively by emitting  $\alpha$ -particles → Helium atoms.



Evidence of abundant nuclear decay in the Paleozoic & Mesozoic eras

## Helium Diffusion from Zircons An Indicator of the Age of the Earth



Isotope	Type of Radiation Emitted	Half-life
↓ Uranium-238	$\alpha$ (1 <sup>st</sup> )	<u>4.47 billion years</u>
↓ Thorium-234	$\beta$ (1 <sup>st</sup> )	24 days
↓ Protactinium-234	$\beta$ (2 <sup>nd</sup> )	6.7 hours
↓ Uranium-234	$\alpha$ (2 <sup>nd</sup> )	<u>240,000 years</u>
↓ Thorium-230	$\alpha$ (3 <sup>rd</sup> )	77,000 years
↓ Radium-226	$\alpha$ (4 <sup>th</sup> )	1602 years
↓ Radon-222	$\alpha$ (5 <sup>th</sup> )	3.8 days
↓ Polonium-218	$\alpha$ (6 <sup>th</sup> )	<u>3.1 minutes</u>
↓ Lead-214	$\beta$ (3 <sup>rd</sup> )	27 minutes
↓ Bismuth-214	$\beta$ (4 <sup>th</sup> )	20 minutes
↓ Polonium-214	$\alpha$ (7 <sup>th</sup> )	0.000164 seconds
↓ Lead-210	$\beta$ (5 <sup>th</sup> )	22 years
↓ Bismuth-210	$\beta$ (6 <sup>th</sup> )	5 days
↓ Polonium-210	$\alpha$ (8 <sup>th</sup> )	138 days
Lead-206		stable

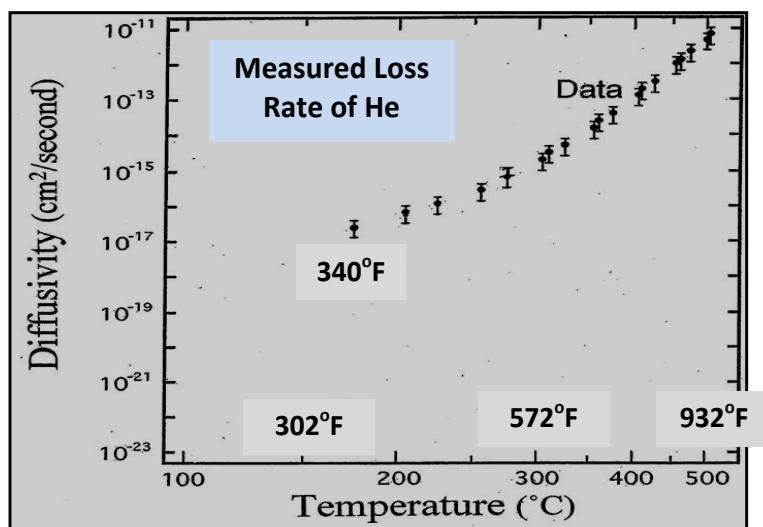
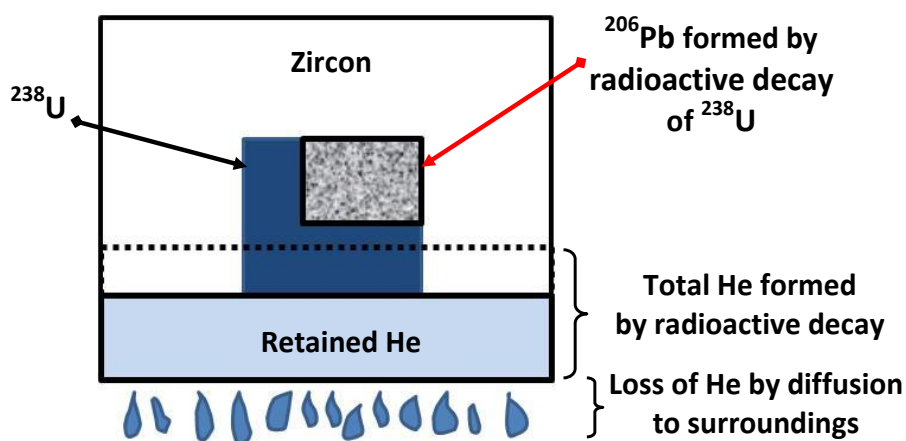
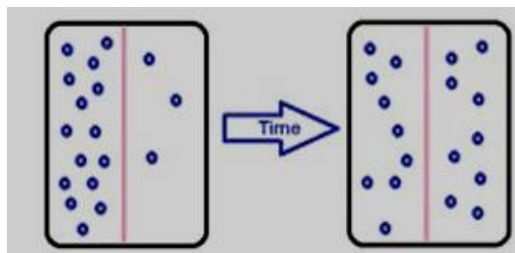
### Primary References:

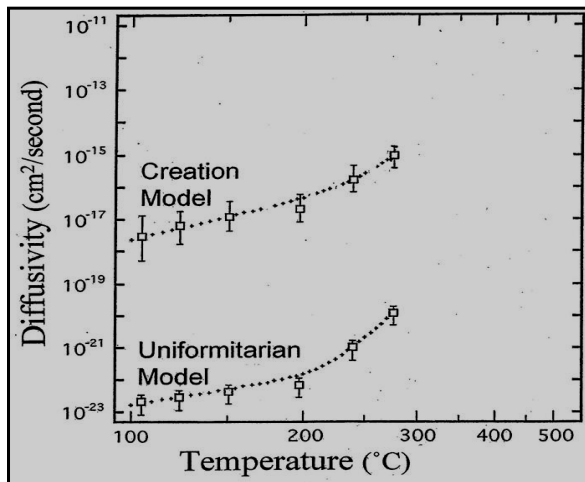
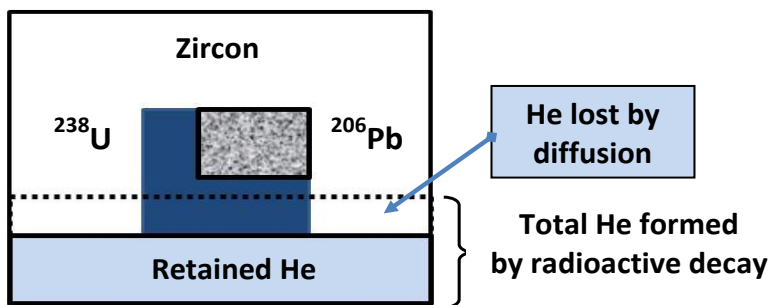
“Radioisotopes and the Age of the Earth”, L. Vardiman, et al, ICR and CRS, 2005

“Thousands ... Not Billions” by D. DeYoung, Master Books, 2005

Collected Research Articles: *J. of Creation*, *CRS Quarterly*, multiple other journals.

## Measured Escape of Helium from Zircons by Diffusive Transport





**Estimated He loss rate:**

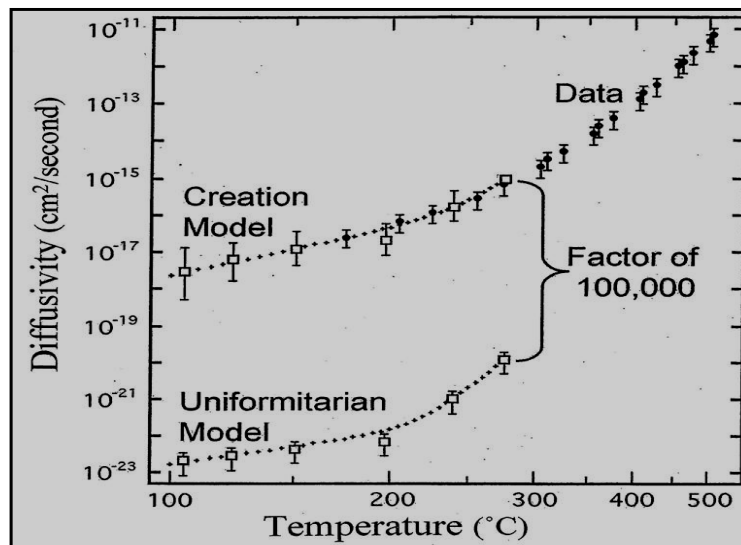
Measured retention plus diffusivity theory with guess for loss time.

Consider two alternatives

- Uniformitarian model – 1.5 billion years
- Creation model – **6000 years**

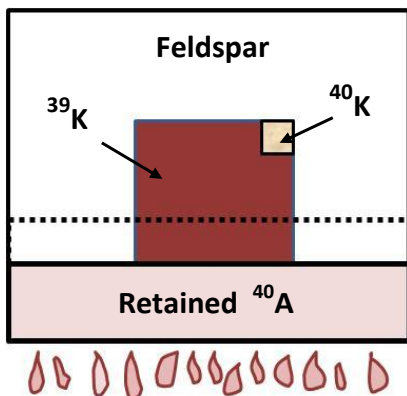
**Conclusion:**

Age of particular granitic rock formation per dating methods of historical geology would require a He loss rate from zircons to be **100,000** times slower than presently measured. Age of granite: **≈ 6000 years.**



### A Further Validation of Zircon Analysis and Reinforced Conclusion

“Basement” Granitic Rock  
from same borehole



Precambrian granitic rock  
Potassium-bearing feldspar

Half-Life of  $^{40}\text{K} \rightarrow ^{40}\text{A}$  decay:  
1.25 billion years

Argon diffusion age of granitic  
borehole sample:

**5100 years**

Max. age range accounting for  
extremes of data errors:  
3000 yrs. < age < 8900 yrs.

### Potassium-Argon Dating: Persistent Excess Argon Problems Illustrated

Location	Date of Event	Radiometric Age
Mt. Edna basalt Sicily	122 B.C.	330,000–170,000 years
Mt. Edna basalt Sicily	A.D. 1972	490,000–210,000 years
Mt. St. Helens Washington	A.D. 1986	300,000–400,000 years
Hualalai Hawaii	A.D. 1800–1801	1.44–1.76 million years

#### Fact to Note:

Significant issues exist with radiometric dating methodology.  
This seems especially so in regard to long half-life isotopes.

Compelling evidence reveals that measured decay rates  
can differ from nominally ‘fixed’ values by factors ranging  
from  $10^4$  to  $10^9$  – particularly for  $\alpha$ -decay rates.

Hence, widely reported estimates for the age of many rock  
formations are neither reliable nor even reasonable estimates.



## Age of the Earth: 'True Science' Assessment

### "Whole Planet" Data

Decay of Earth's Magnetic Field → Age of Earth < 10,000 years

Good correspondence with Biblical Creation Model → 6000 year age

### "Local" Measurements

<sup>14</sup>C Dating of Fossiliferous Material → Age of Earth < 15,000 years

Good correspondence with Biblical Creation Model → 6000 year age

### "Deep Rock" Measurements

Helium and Argon Diffusion Data → Age of Earth ≈ 6000 years

Excellent correspondence with Biblical Creation Model → 6000 year age

#### A Further Fact to Confront:

With compelling evidence that the age of the earth is about 6000 years, and yet *in situ* measurements of deep rocks and diamonds reveal abundant radioactive decay products, we conclude that episodes of greatly accelerated nuclear decay must have occurred at some point during the history of the planet.

Possible such occasions:

- ◆ during creation week?
- ◆ at imposition of the Curse?
- ◆ during year of the Flood?

"For a fire has been kindled in My anger,  
and burns to the lowest Sheol,  
and consumes the earth with its yield,  
and sets on fire the  
foundations of the mountains."

*Deut. 32:22*


The possible existence of such an event, or events, stimulates further perplexing considerations. For example:

- ◆ What happened to all the heat from nuclear reactions?
- ◆ How might such episodes have been initiated?
- ◆ Might there have been accompanying cosmic events?
- ◆ ...

## The Issue: Dating the Past Based on the Present

**CREATION: *When?***

Observed state of a burning candle

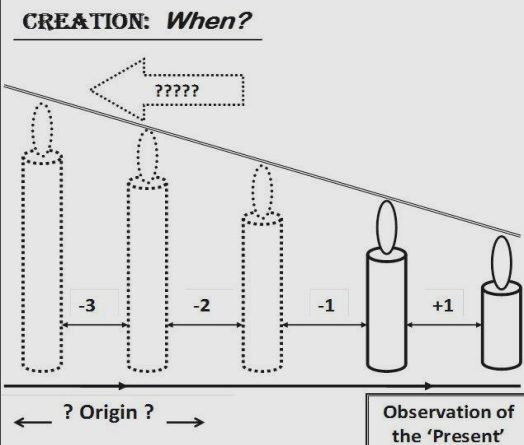



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**Questions:**

- How long has this candle been burning?
- What was the length of the candle when it was first lit?

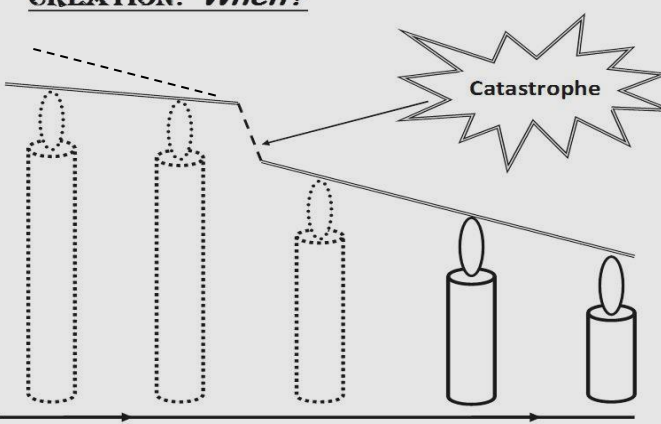
**CREATION: *When?***



**Dating Procedure**

- Determine present rates by observation
- *Assume* measured rates persist for *all past time*

**CREATION: *When?***



Present rates may not be relevant to dating events in the indefinite past

The reality of the Flood invalidates many proposed dating procedures