

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


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The Issue: Dating the Past Based on the Present

CREATION: *When?*

Observed state of a burning candle



Questions:

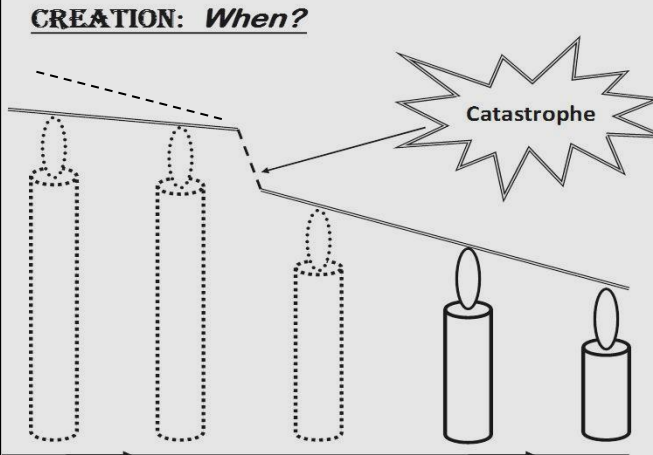
- How long has this candle been burning?
- What was the length of the candle when it was first lit?

CREATION: *When?*

Dating Procedure

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

CREATION: *When?*



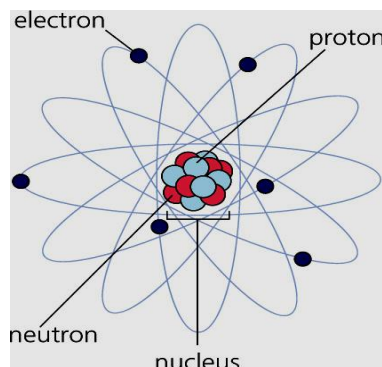
Present rates may not be relevant to dating events in the indefinite past

The reality of the Flood invalidates many proposed dating procedures

Radiometric Dating: Fundamental Considerations

Radioactive Decay

The nuclei (protons & neutrons) of some atoms are unstable
A nucleus spontaneously decays from its *parent* form toward a stable *daughter* form



Principle of a Half-Life

Time for $\frac{1}{2}$ of unstable *parent* atoms to spontaneously decay into *daughter* atoms

Time for $\frac{1}{2}$ of remaining "sand" to drain through the neck of the hourglass

parent element (sand)

daughter element (sand)



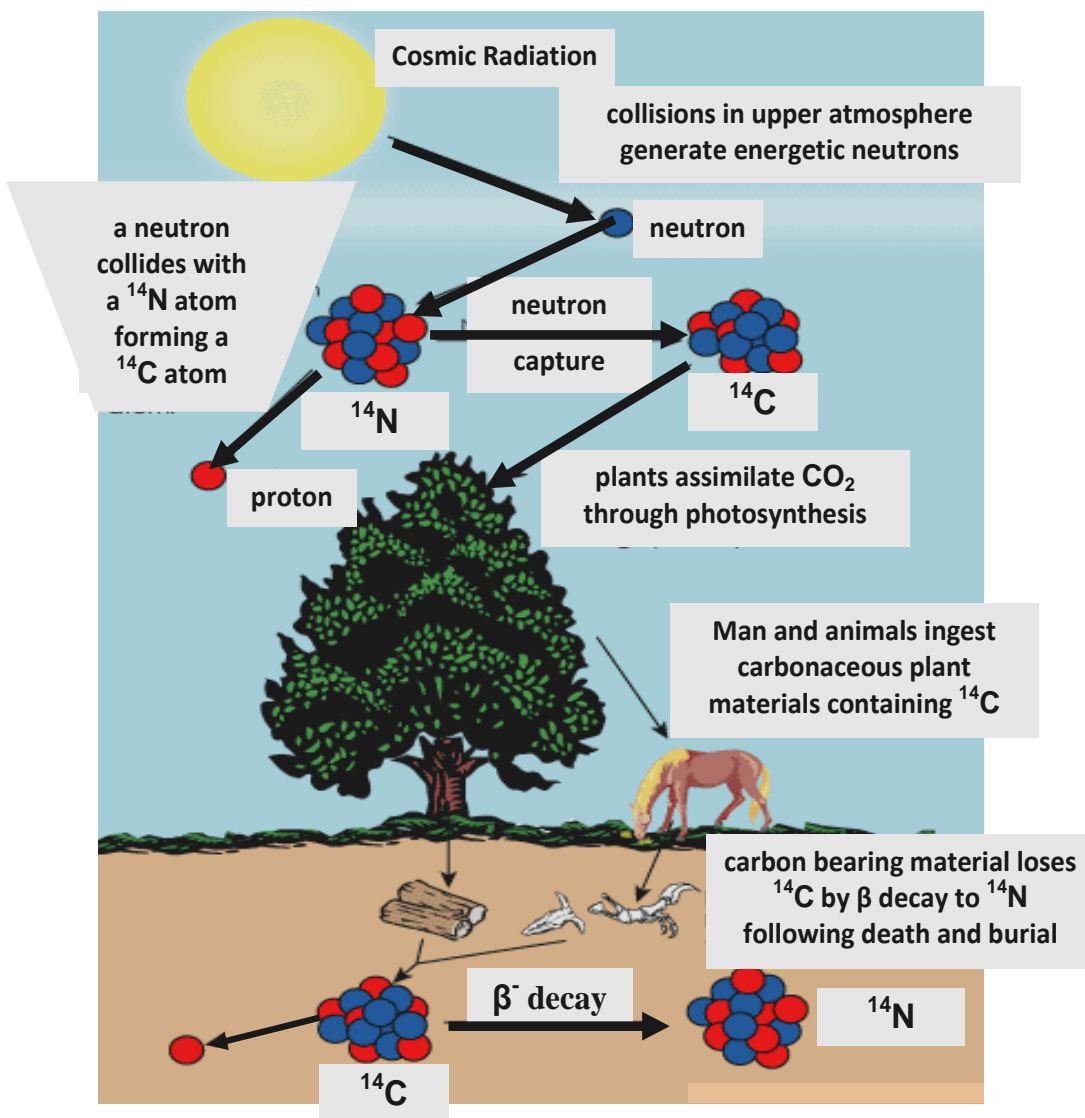
Critical Issues

- ◆ Was there any *daughter* "sand" present initially?
- ◆ Has the rate of flow from *parent* "sand" to *daughter* "sand" been constant over all time?
- ◆ Has any contamination occurred? That is, has any *daughter* "sand" been added from some external source?
- ◆ How accurately can we measure the *daughter-to-parent* ratio?

?? is an external source of *daughter* element (sand) available ??

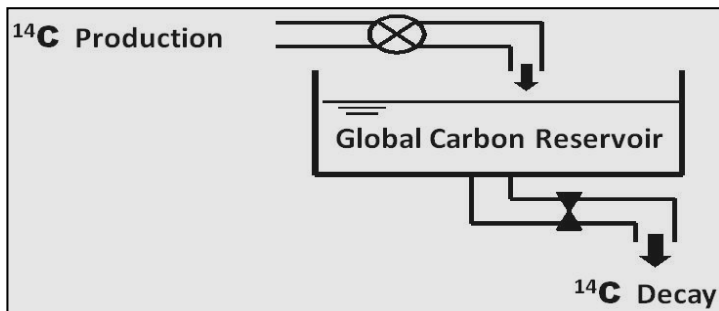
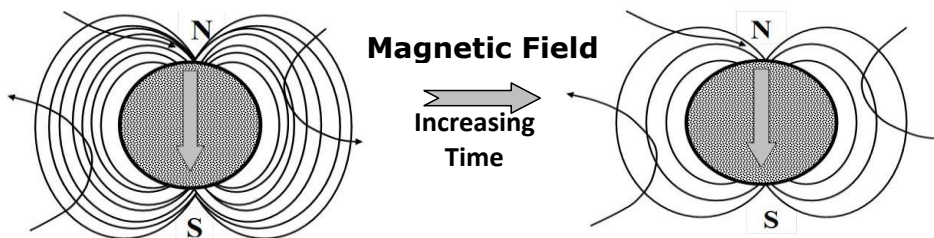
The Radio-Carbon Method

neutron capture reaction: $n + {}^{14}_7\text{N} \rightarrow {}^{14}_6\text{C} + p$



β^- decay reaction (spontaneous): ${}^{14}_6\text{C} \rightarrow {}^{14}_7\text{N} + e^- + \bar{\nu}_e$

The Radio-Carbon Method cont'd.



Magnetic Field Decay:
 $T_{1/2} \approx 1400$ years

^{14}C Decay:
 $T_{1/2} \approx 5700$ years

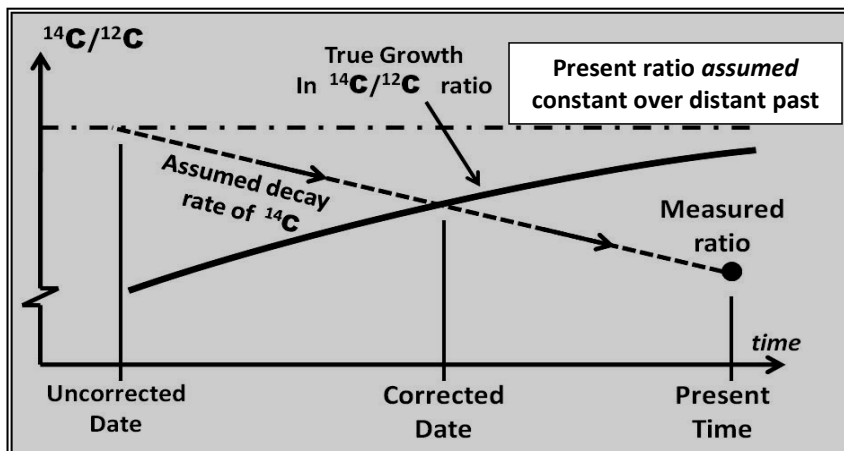
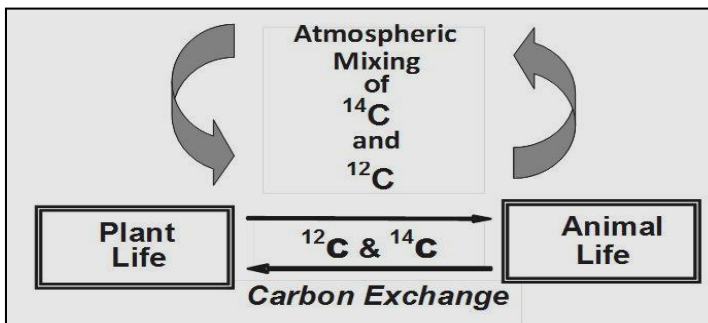
$5700 / 1400 \approx 4$

The Carbon Exchange

Animals consume Plants
 (mixed ^{12}C and ^{14}C)

Animals exhale CO_2

Plants ingest CO_2



Key Point:

The increasing $^{14}\text{C}/^{12}\text{C}$ ratio telescopes forward all ^{14}C dates yielding shorter "true dates".

The Issue: Dating the Past Based on the Present

RADIO-CARBON DATES

Published Ages of Specimens	Number of Dated Specimens	"Corrected" Ages of Specimens
0 – 580	780	0 – 500
580 – 1160	1174	500 – 1000
1160 – 1745	857	1000 – 1500
1745 – 2340	777	1500 – 2000
234 – 2940	628	2000 – 2500
2940 – 3545	538	2500 – 3000
3545 – 4160	447	3000 – 3500
4160 – 4780	371	3500 – 4000
4780 – 5410	290	4000 – 4500
5410 – 5995	86	4500 – 4950
5995 – 6805	218	4950 – 5500
6805 – 7500	146	5500 – 6000
7500 – 8215	133	6000 – 6500
8215 – 8950	127	6500 – 7000
8950 – 9710	107	7000 – 7500
9710 – 10,500	86	7500 – 8000
10,500 – 11,320	66	8000 – 8500
11,320 – 12,980	72	8500 – 9500
12,980 – 15,000	65	9500 – 10,500
15,000 – 17,100	52	10,500 – 11,500
17,100 – 19,900	41	11,500 – 12,500
19,900 – 23,240	39	12,500 – 13,500
23,240 – 29,120	51	13,500 – 14,500
29,120 – 37,740	127	14,500 – 15,500
37,740 - ∞	13	15,500 – 15,700

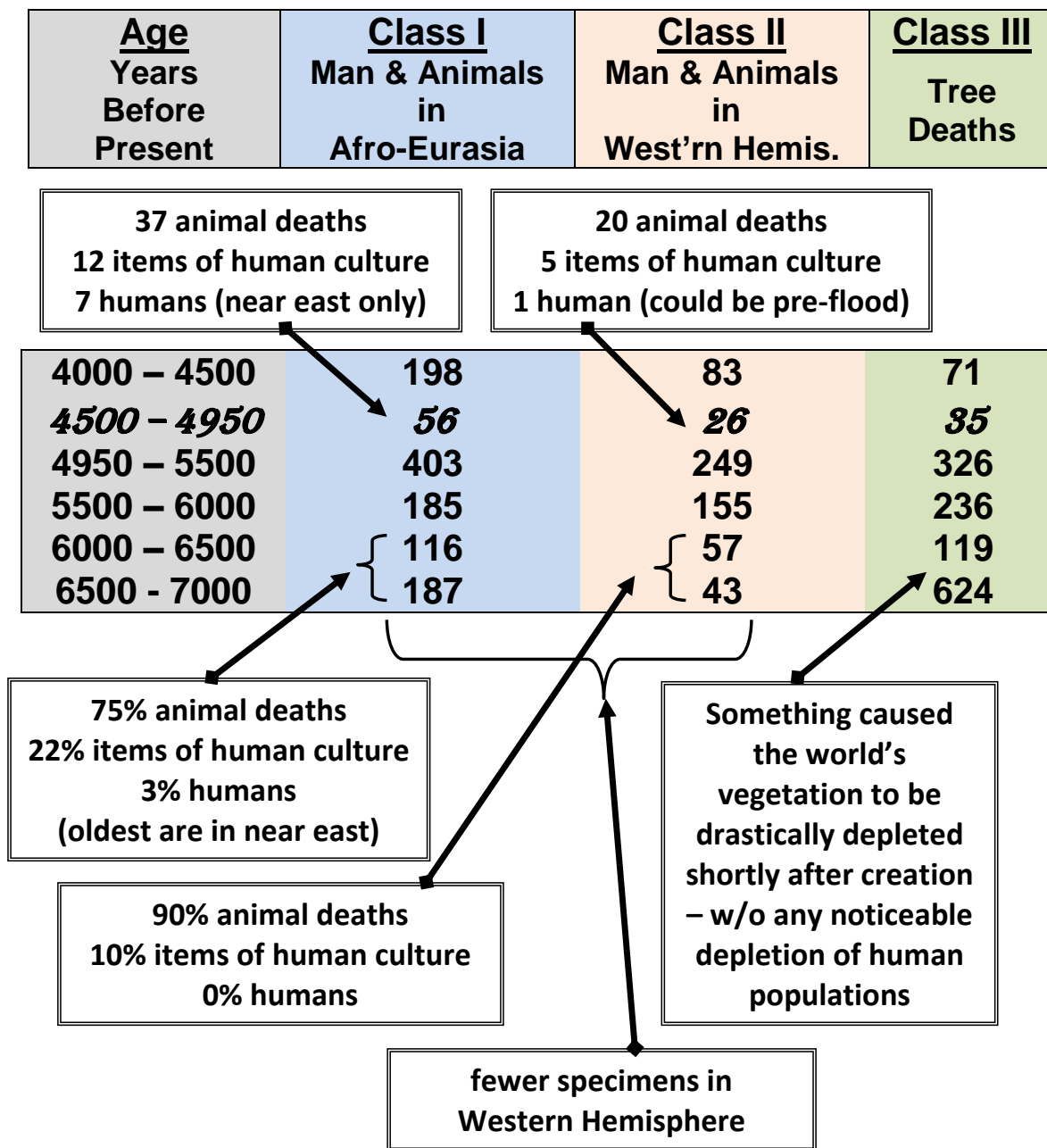
Adapted from: R. L. Whitelaw, *Creation Res. Soc. Quart.*,
Vol. 7, pp.56-71, 1970.

**DISTRIBUTION
OF
"CORRECTED" RADIO-CARBON DATES**

Period	Number of Dated Specimens in Each Period		
Age Years Before Present	Class I Man & Animals in Afro-Eurasia	Class II Man & Animals in Western Hemisphere	Class III Tree Deaths
0 – 500	276	496	154
500 – 1000	384	803	150
1000 – 1500	361	540	119
1500 – 2000	357	391	108
2000 – 2500	363	253	110
2500 – 3000	344	182	108
3000 – 3500	289	158	102
3500 – 4000	259	114	91
4000 – 4500	198	83	71
4500 – 4950	56	26	35
4950 – 5500	403	249	326
5500 – 6000	185	155	236
6000 – 6500	116	57	119
6500 - 7000	187	43	624

Adapted from: R. L. Whitelaw, *Creation Res. Soc. Quart.*,
Vol. 7, pp. 56-71, 1970.

"CORRECTED" RADIO-CARBON DATES – II



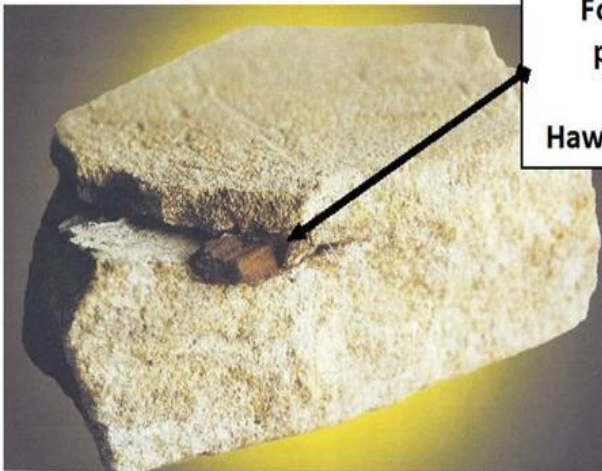
Adapted from: R. L. Whitelaw, *Creation Res. Soc. Quart.*
Vol. 7, pp. 56-71, 1970

<u>¹⁴C Content for 10 Coal Samples</u>			
Era	Location	Conventional Age	¹⁴ C / ¹² C pMC ± 1σ
Cenozoic (recent life)	Montana	34 – 55 M yrs	0.27 ± 0.02
	North Dakota	34 – 55 M yrs	0.20 ± 0.02
	Texas	34 – 55 M yrs	0.30 ± 0.03
Mesozoic (middle life)	Arizona	65 – 145 M yrs	0.18 ± 0.02
	Utah	65 – 145 M yrs	0.10 ± 0.03
	Utah	65 – 145 M. yrs	0.35 ± 0.03
Paleozoic (ancient life)	Illinois	300 – 311 M yrs	0.29 ± 0.03
	Kentucky	300 – 311 M yrs	0.46 ± 0.03
	Pennsylvania	300 – 311 M yrs	0.13 ± 0.02
	Pennsylvania	300 – 311 M yrs	0.19 ± 0.02
Average pMC = 0.247 ± 0.025 → → ≈ 50,000 yrs			
<u>¹⁴C Content for 12 Diamond Samples</u>			
Average pMC = 0.09 ± 0.025 → → ≈ 60,000 yrs			
J.R. Baumgardner "Radioisotopes and the Age of the Earth – Vol.2" pp. 587 – 630			

Discordant Radioactive Dates **Fossil Wood in 'Ancient' Sandstone**

Fossil Information

- ♦ **Location: Sydney, Australia**
 - and surrounding area (60 mi radius)
- ♦ **Fossil Position: Hawkesbury Sandstone**
 - a formation covering 7,700 sq. mi. up to 820 ft thick
- ♦ **A very hard, durable rock (mineral quartz grains)**
 - visible as prominent cliffs along Sydney Harbor ... and containing spectacular fossil graveyards of fish, sharks and plants.
- ♦ **Nominal 'age' of Hawkesbury formation:**
 - ~ 225 – 230 million years



Fossil wood found protruding from a chunk of Hawkesbury Sandstone

Nominal ^{14}C 'Age': ~ 33,720 ± 430 yrs

"Flood Corrected" Age: ~ 4500 yrs

Ref. A. Snelling, *Creation*, Vol. 21, pp. 39-41, (1999)

Discordant Radioactive Dates
Fossil Wood in an 'Ancient' Basalt Flow

Radiocarbon (^{14}C) Analysis of Fossil Wood Samples Crinum Coal Mine, Queensland, Australia		
Sample	Lab	^{14}C Age (yrs.)
Wood in Drill Core	Geochron Lab	> 35,620
Wood in Drill Core	ANSTO	44,700 \pm 950
Wood Sample #1	Geochron Lab	29,544 \pm 759
Wood Sample #2	ANSTO	37,800 \pm 3,450

Potassium-Argon (K–Ar) Analysis of Basalt Samples Crinum Coal Mine, Queensland, Australia			
Basalt Sample	Lab	K–Ar 'Age' (Millions of Yrs)	Avg. K–Ar Age (Millions of Yrs)
Outcrop #1	AMDEL	44.9 \pm 1.1	43.9 \pm 4.8
Outcrop #2	AMDEL	47.9 \pm 1.6	
Outcrop #2	Geochron	39.1 \pm 1.5	
Drill Core	Geochron	58.3 \pm 2.0	47.5 \pm 10.8
Drill Core (near wood)	Geochron	36.7 \pm 1.2	

Nominal 'Age' of Basalt Flow: \approx 30,000,000 yrs

"Corrected" ^{14}C Age of Wood Samples: \approx 4500 yrs

Ref. A. Snelling, *Creation*, Vol. 20 (1), pp. 24-27 (1997-98)

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

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

Good correspondence with Biblical Creation Model → 6000 year age

<u>Summary Chronology of the Old Testament</u>		
Year An. Hom.	Year BCC (Before Christ Corrected)	Dated Events and Comments
0		Adam created; Fall & Imposition of Curse.
1	4042	Adam Age 1 – A Mature Adult.
.
1656	2387	Noahic Deluge (Flood).
.
2083	1960	Covenant Promise given to Abraham.
.
2513	1530	Exodus Begins.
.
3063	980	David begins to reign as King of Israel.
.
3587	456	Babylon conquered by Medo-Persia.
.
3589	454	Beginning of the first 69 weeks (483 years) of Daniel's 70 weeks (of years).
.
4038	5	Birth of Christ.
4039	4	Christ age 1
.
4042	1 BCC	Christ age 4
4043	1 AD	Christ age 5