

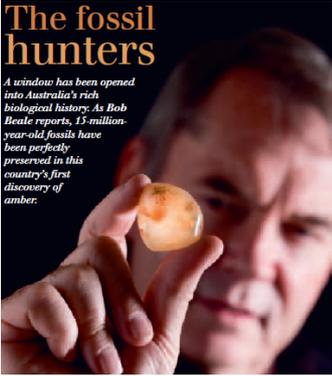
DEEP TIME

(A Christian Geologist's Perspective)

Uniken June, 2010



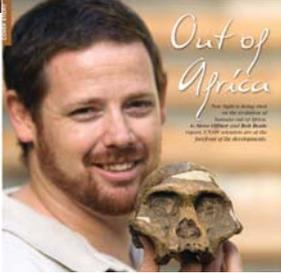
The fossil hunters
A window has been opened into Australia's rich biological history. As Bob Beale reports, 15-million-year-old fossils have been perfectly preserved in this country's first discovery of amber.



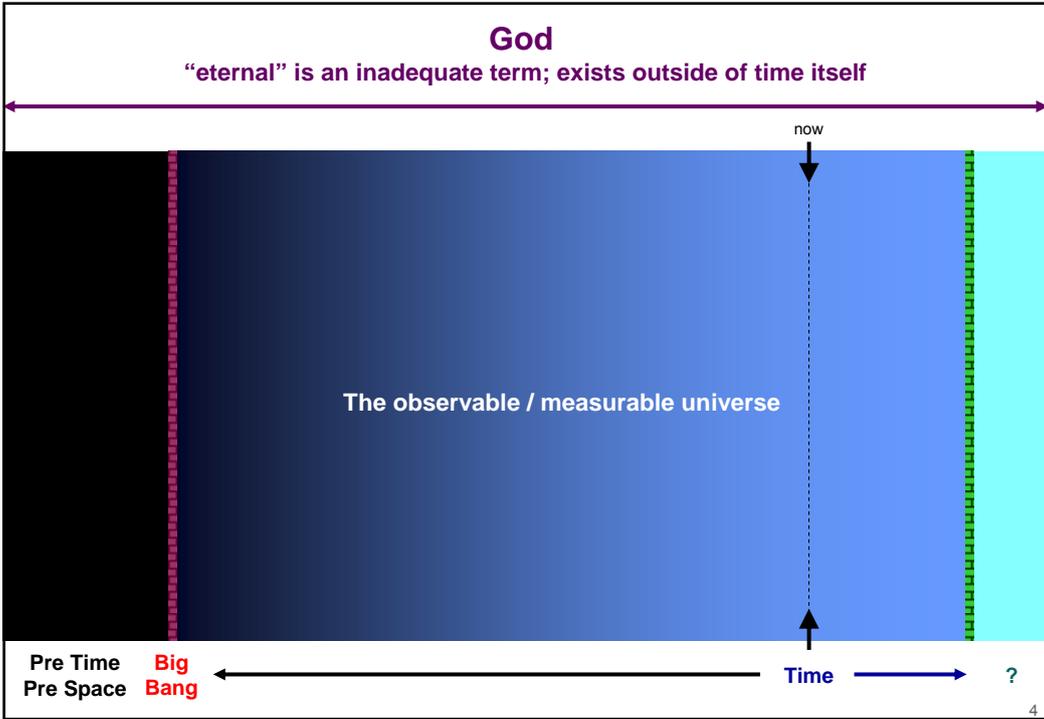
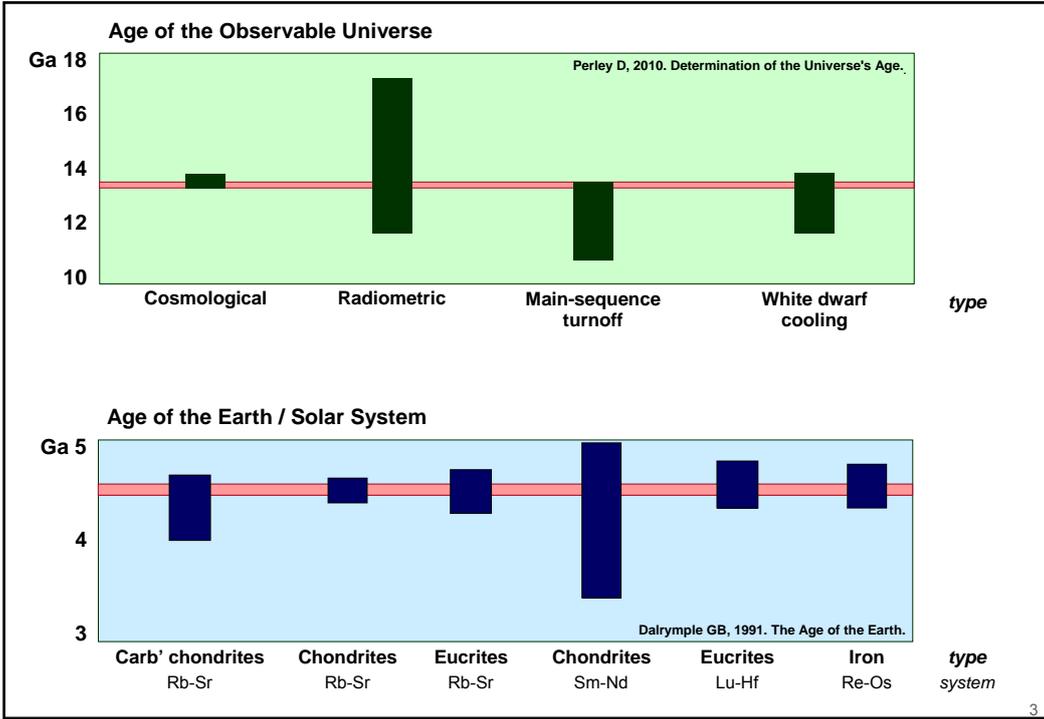
Uniken August, 2010



Nature June 2002

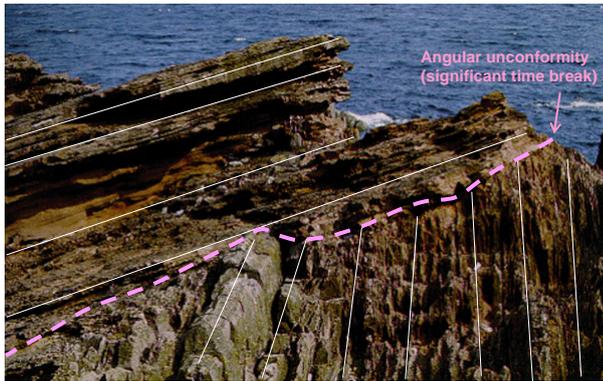


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The mind seemed to grow giddy by looking so far into the abyss of time.

John Playfair



Siccur Point, Scotland



James Hutton
1726-1797

Painting by Sir Henry Rayburn
National Gallery

Untreated Moruya Granite
still very fresh

British and ?BHP Steel
painted regularly



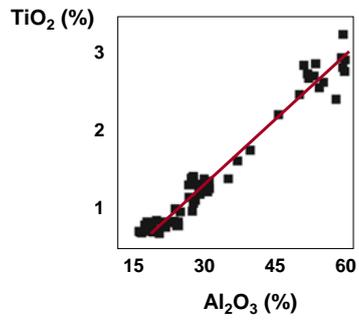
© Decoworks 2009

Hadrian's wall



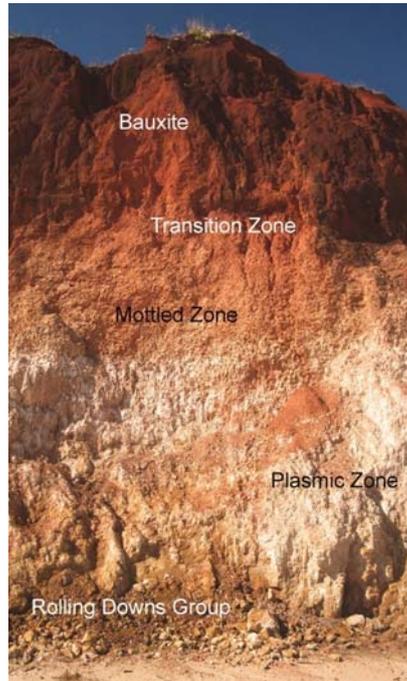
www.travlang.com

Deeply weathered bauxitic profile, Weipa



Parent material is a sandstone with clay minerals, feldspars and quartz.

Eggleton and others 2008



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Oberon basalts

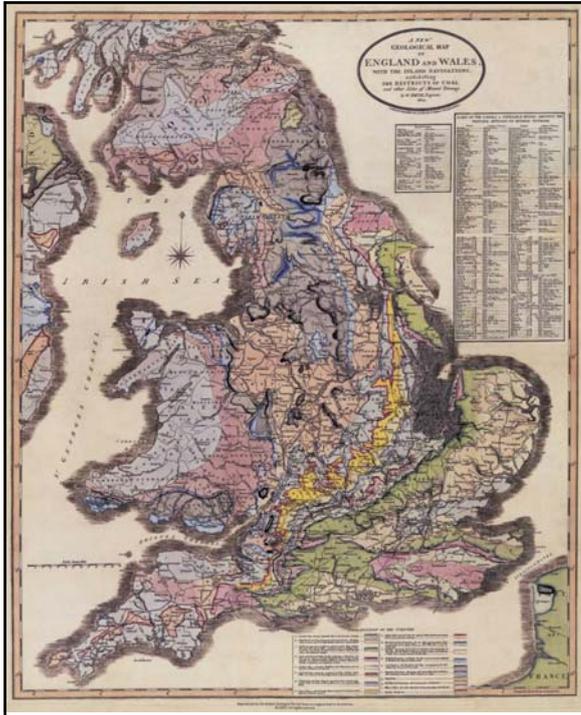
Part converted to clays, iron oxides and silica, with loss of some Ca and Mg

Freshish



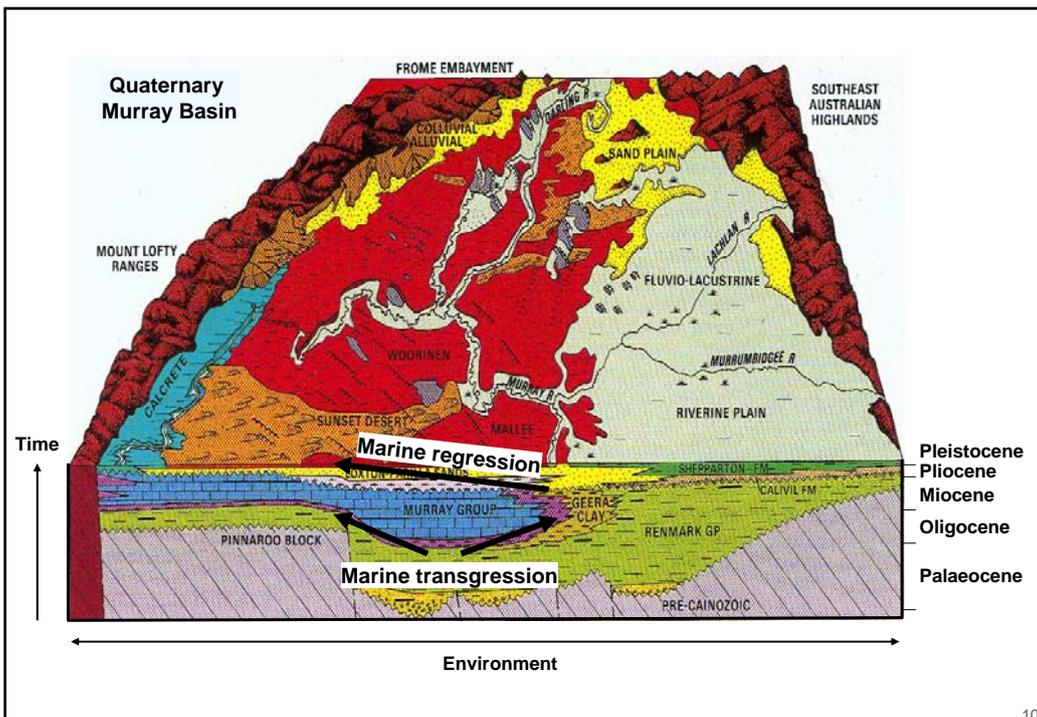
crcleme.org.au/Educ/rgg/4-mt_oberon/index.html

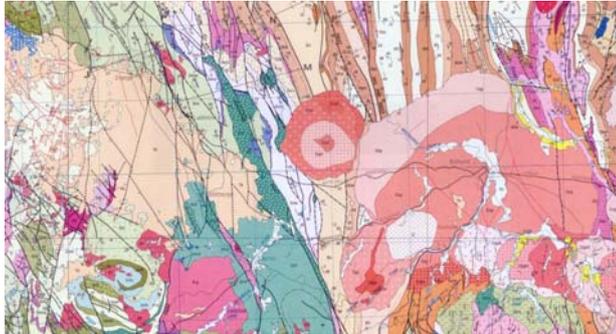
8



William Smith
1769 – 1839

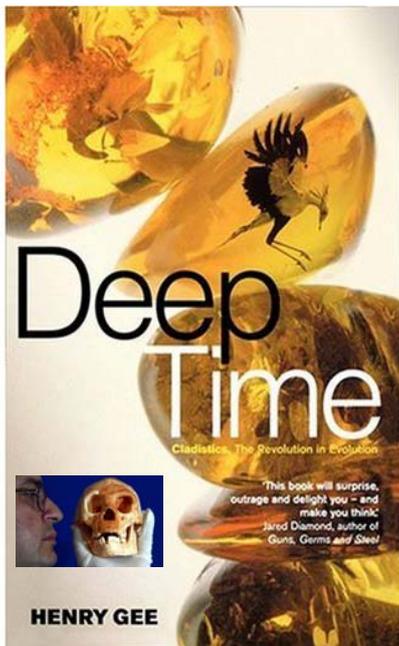
Painting by Hugues Fourau
National Gallery





Charles Lyall
1797 – 1875

Photograph by David Octavius Hill
Metropolitan Museum of Art



The disconnection and isolation of events worsens further as centuries turn into millennia, tens of millennia, and finally into millions of years: intervals so vast that they dwarf the events within them.

Events become disconnected, separated like stars by gulfs of space measurable not in miles, but in light-years. This is geological time, far beyond everyday human experience.

This is Deep Time.

Deep Time is like an endless, dark corridor, with no landmarks to give it scale. This darkness is occasionally pierced by a shaft of light from an open door.

Henry Gee, *In Search of Deep Time*

Do you not know? Have you not heard? The LORD is the everlasting God, the Creator of the ends of the earth. He will not grow tired or weary, and his understanding no one can fathom.

Isaiah 40:28

So was fulfilled what was spoken through the prophet: "I will open my mouth in parables, I will utter things hidden since the creation of the world."

Matthew 13:35

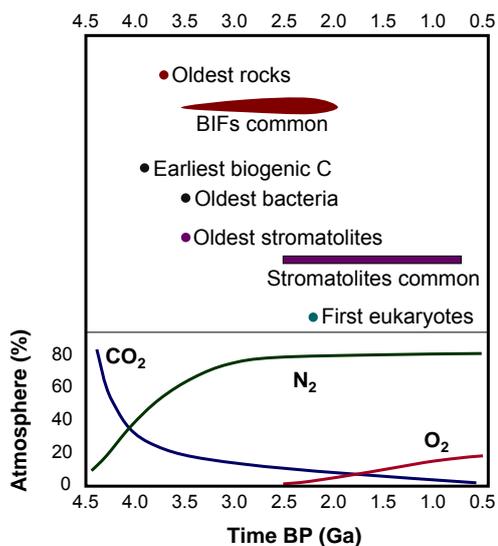
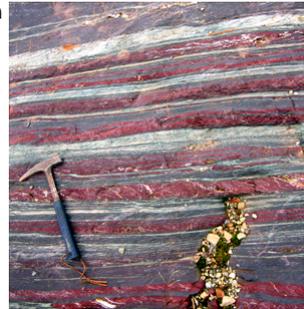
For since the creation of the world God's invisible qualities—his eternal power and divine nature—have been clearly seen, being understood from what has been made, so that men are without excuse.

Romans 1:20



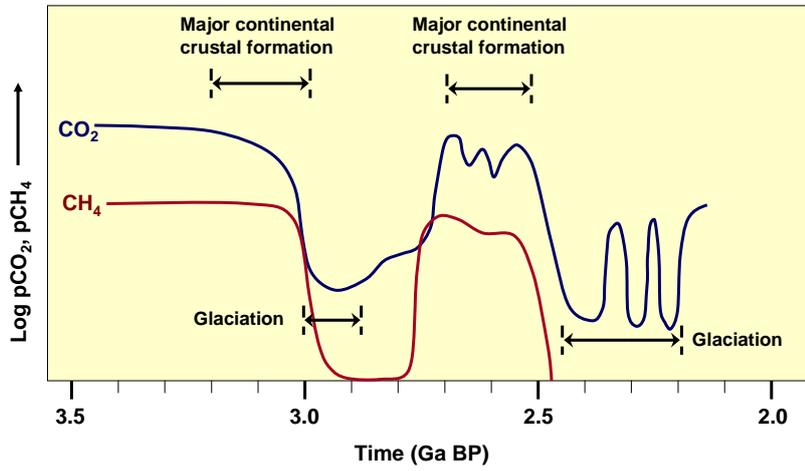
Kingdom monera

Banded iron formation
Cosmos magazine



Stromatolite
rst.gsfc.nasa.gov

Fluctuations in CO₂ and CH₄ between 3.5 and 2.1 Ga (modified from Lowe and Tice 2004)



15

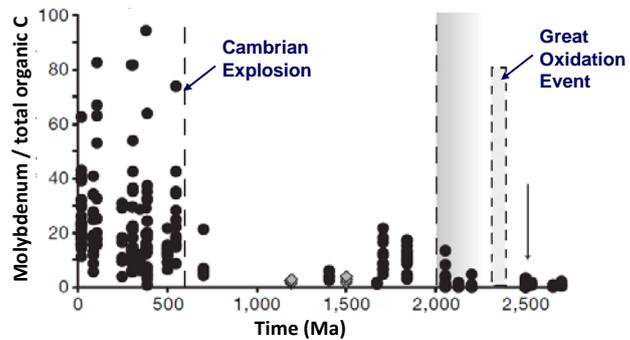


Bright yellow saléite crystals
Mg(UO₂)₂(PO₄)₂·10H₂O
formed under more oxidising
conditions post 2.4 Ga GOE.

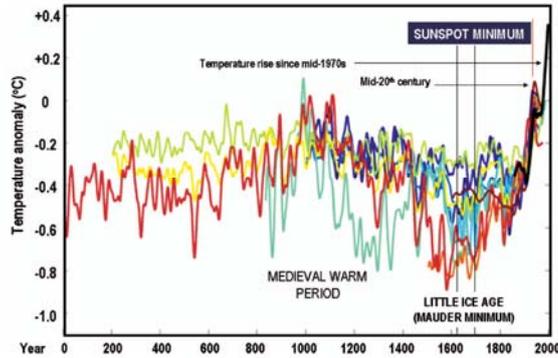
(from Sverjensky and Lee 2010)

Changes in the Mo content
of shales (high values
indicate elevated O₂)

(from Scott et al., 2008)



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Ever since humans gained control over the use of fire, <100 ka and possibly <700 ka, their impact over the natural environment has been increasing, perhaps justifying a redefinition of the species as Homo prometheus.

The biological and philosophical questions of the underlying rationale for this phenomenon – major climate change and mass extinction triggered by a mammal species – defy understanding.

Metaphorically perhaps, having reached the pinnacle of intelligence and consciousness in the animal kingdom, the human species is now paying the price.

Glikson, 2008

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Antonio Snider-Pellegrini, 1858
Based on Abraham Ortelius
Thesaurus Geographicus, 1596

Evidence:
Geometry

Process:
Unknown

Requirements:
Unknown

PERMIAN 225 Ma **TRIASSIC 200 Ma**

JURASSIC 150 Ma **CRETACEOUS 65 Ma**

USGS, 2009

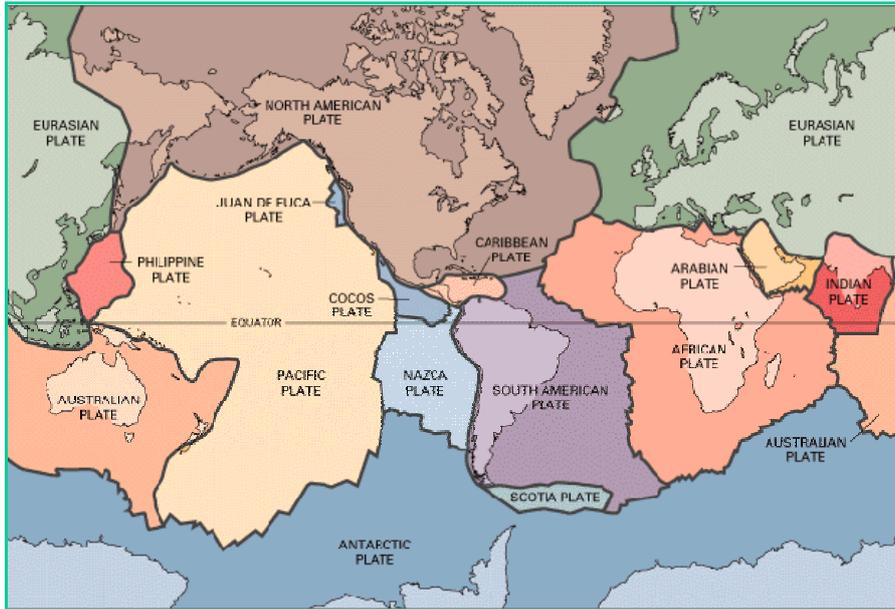
PRESENT

Evidence:
Geometry
Geochronology
Geological correlations
Paleomag polar wandering paths
Palaeontological correlations
Geophysics, including seismics

Process:
Plate tectonics

Requirements:
225 Ma

18



The current distribution of tectonic plate boundaries – a jigsaw 4.5 billion years in the construction



Woolly mammoth



George Cuvier
1769 – 1832

Painting by
Mathieu Igance van Bree



Megatherium

But with regard to the material world, we can at least go so far as this-we can perceive that events are brought about not by insulated interpositions of Divine power, exerted in each particular case, but by the establishment of general laws.

William Whewell

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Why is uniformitarianism theologically appealing?

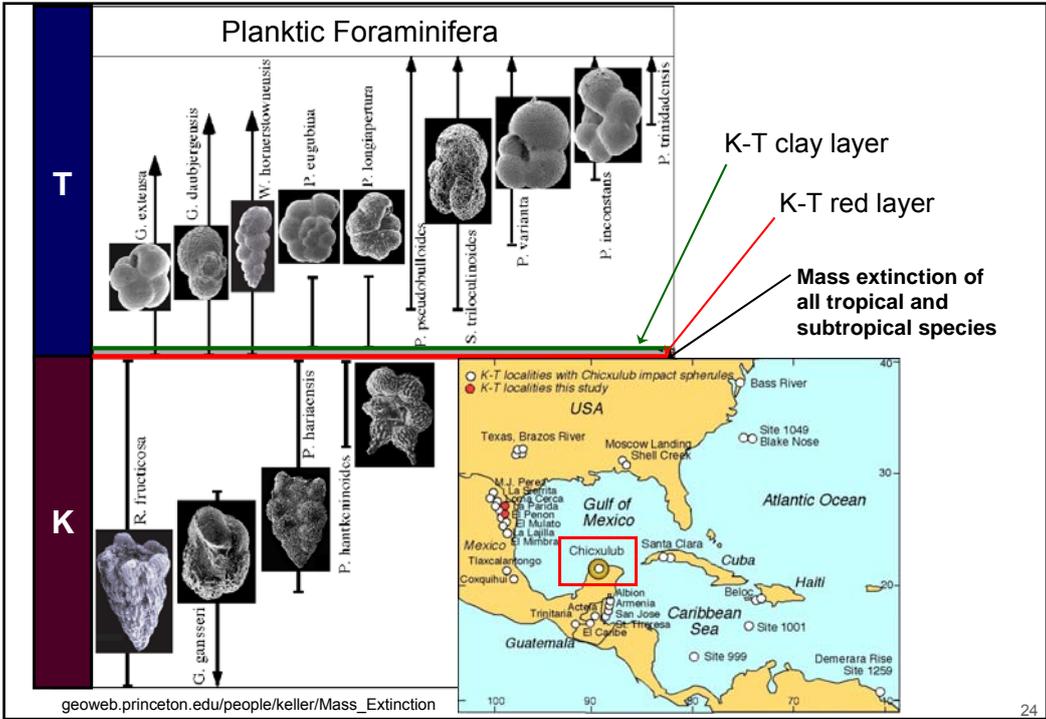
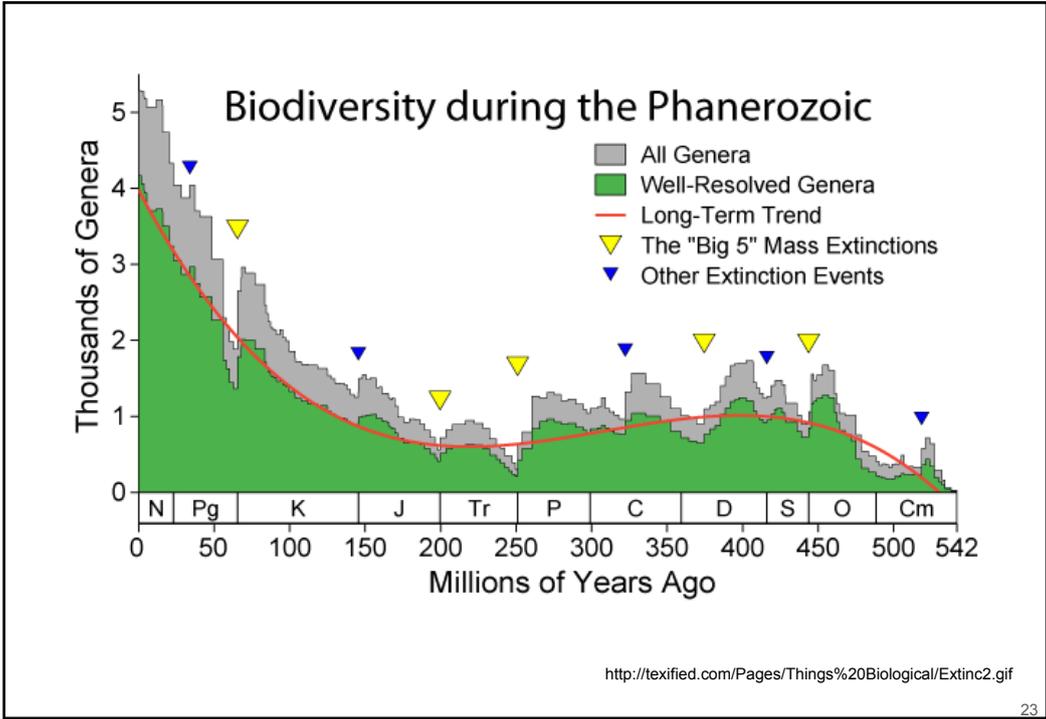
Jesus Christ is the same, yesterday and today and forever.

Hebrews 13:8

Every good and perfect gift is from above, coming down from the Father of the heavenly lights, who does not change like shifting shadows.

James 1:17

22



Permo-Triassic extinction speculation



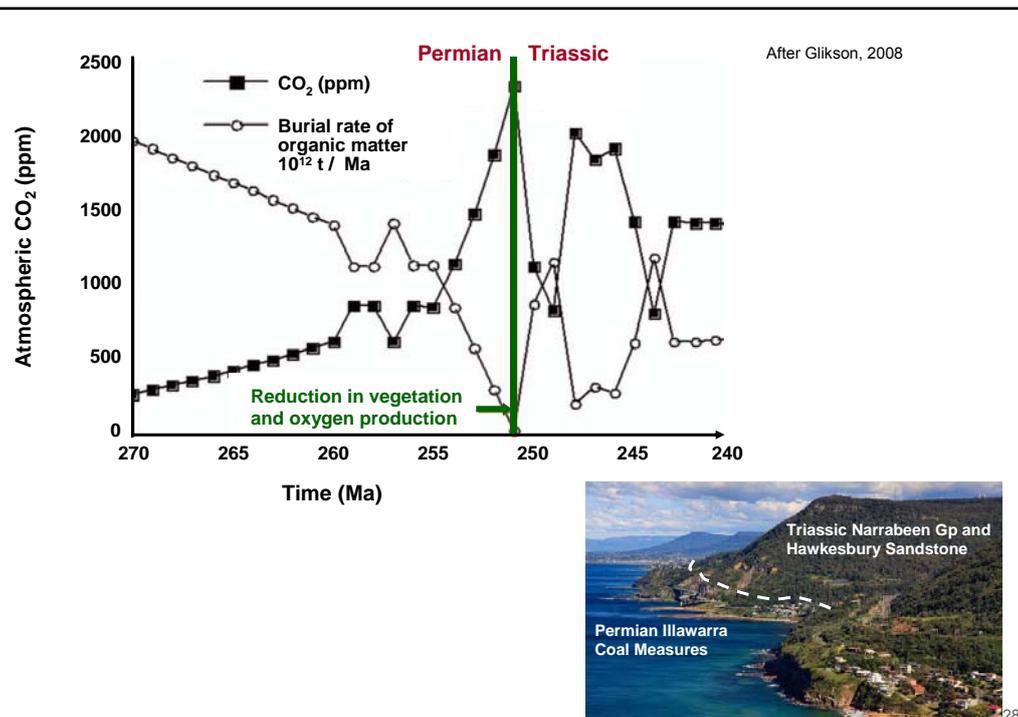
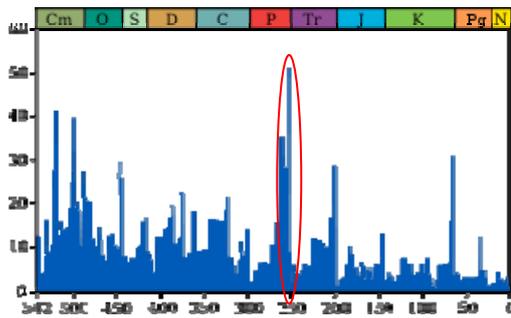
Flood basalts

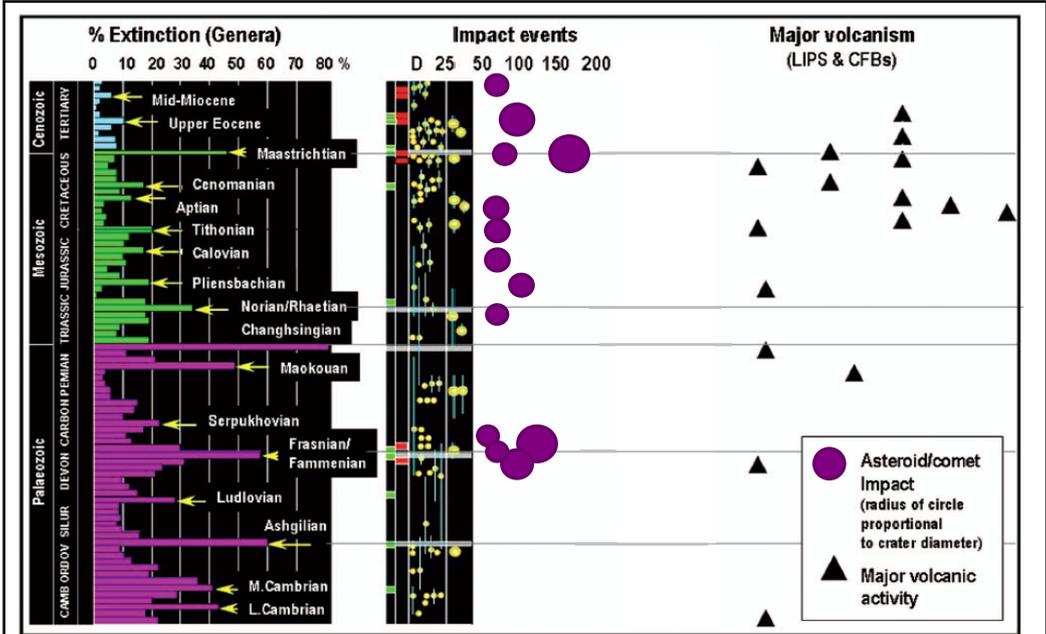
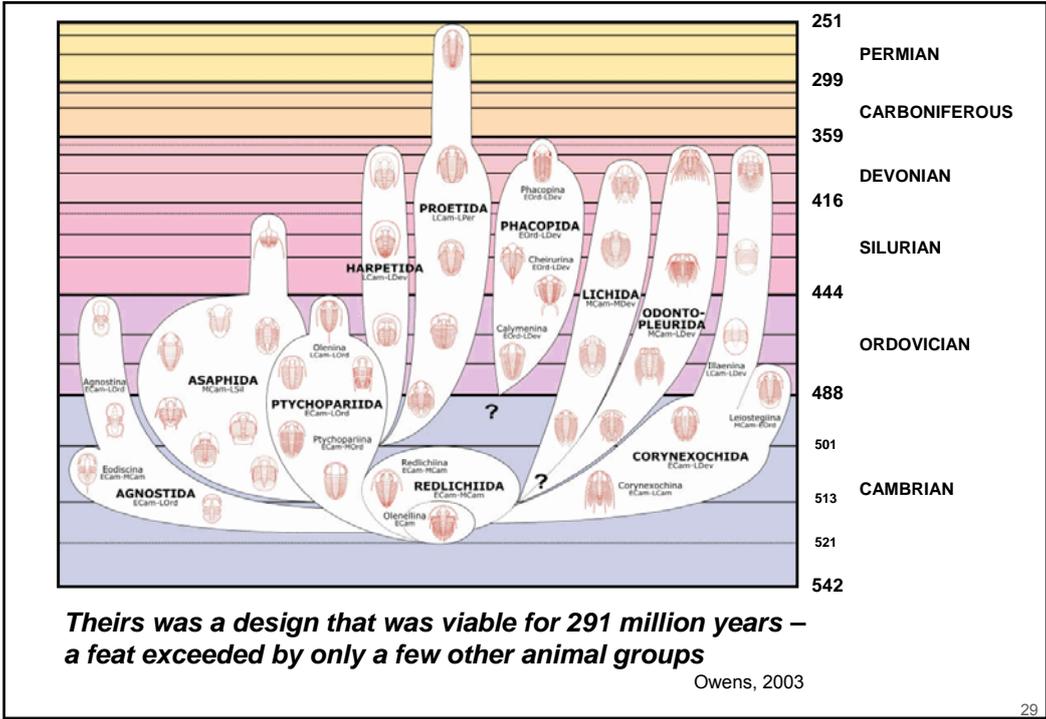


Clathrates



Bolides





While the meteorite hypothesis cannot be ruled out, it has one major disadvantage... Do we really have to resort to an external phenomenon such as a sudden meteor impact to do so? By looking for explanations that lie outside the given phenomenon, we run the risk of abandoning the search for a real understanding. Moreover, a solution which seems attractive because it removes all difficulties at a stroke can create even greater difficulties than the ones it was alleged to have solved.

Woods and Grant,
Reason in Revolt: Marxist Philosophy and Modern Science

As Marxists we approach all questions from the standpoint of dialectical materialism. Dialectics attempts to derive the laws of motion of nature, society and human thought from a careful analysis of objective phenomena and processes.... It is characteristic of formalistic thinking to invent a hypothesis and then try to get the facts to fit into it. Dialectics, on the contrary, tries to work out the laws that flow from the thing itself.

ibid

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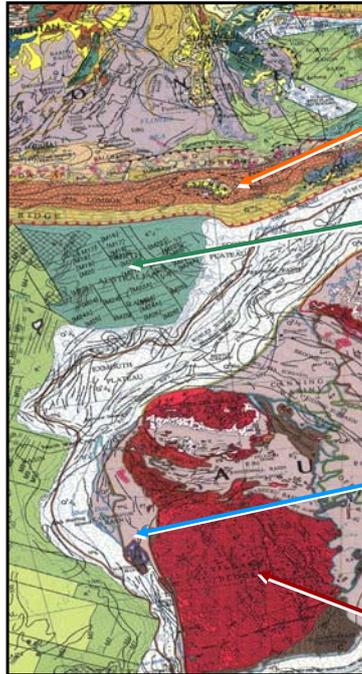


The Mary Celeste

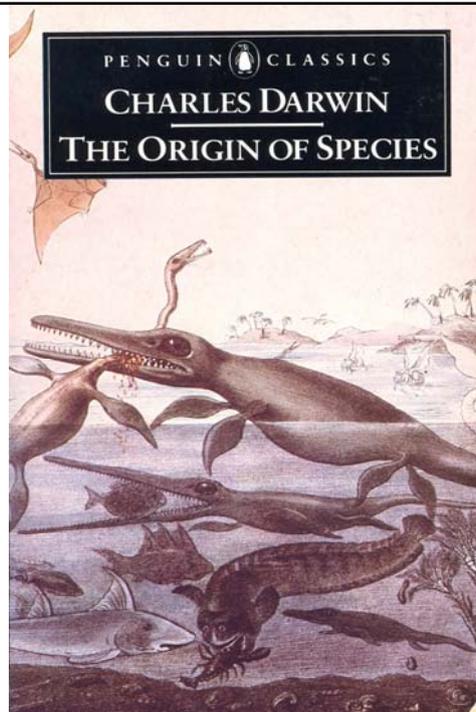
(The end of the Permian)

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Where are the old oceans (>300 Ma)?



Era	Period	Epoch	Duration in millions of years	Millions of years ago
CENOZOIC	Quaternary	Holocene	1.8	0.01
		Pleistocene	3.5	1.3
		Miocene	18.5	23.8
	Tertiary	Oligocene	8.9	33.7
		Eocene	21.1	54.8
		Paleocene	15.2	66
MESOZOIC	Cretaceous		79	144
		Jurassic	62	206
		Triassic	42	248
PALEOZOIC	Permian		42	290
		Pennsylvanian	33	323
	Carboniferous	Mississippian	31	354
		Devonian	63	417
	Silurian		26	443
		Ordovician	47	490
	Cambrian		53	543
		PRECAMBRIAN		

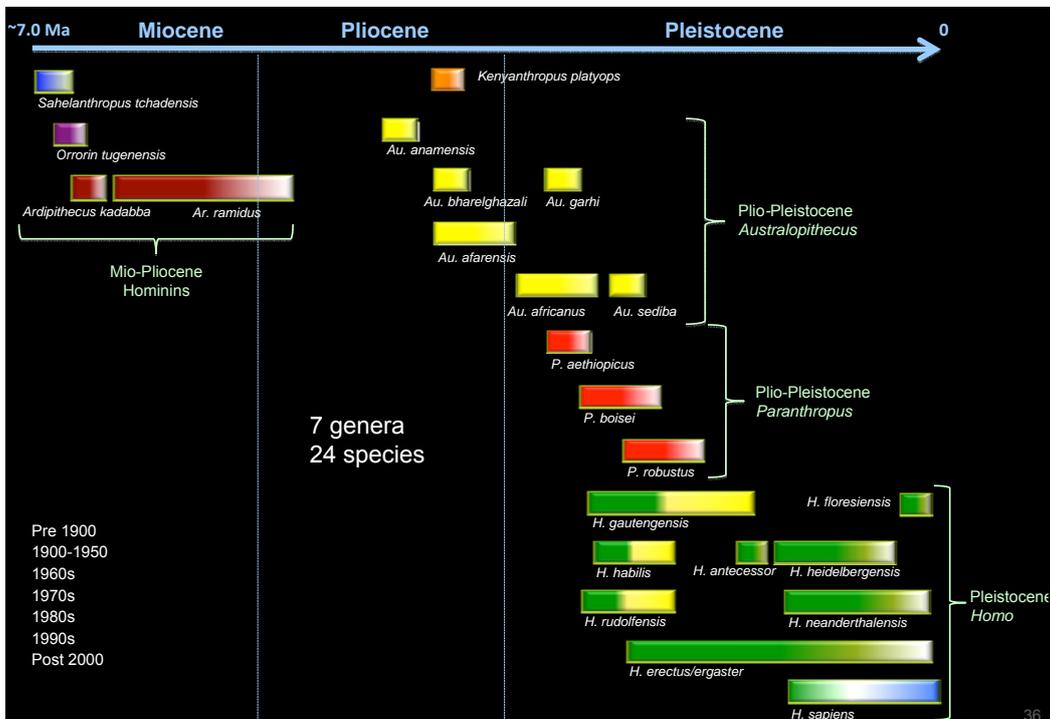


**Fossils are where you find them, not where you want them.
They are not found spread uniformly through the Earth's sediments.
They are granted to posterity only thanks to accidents of geology.**

A fossil can be thought of as an event in Deep Time. Compared with the immensity of time in which it is found, a fossil is a point in time of zero extent: a fossil either exists or it doesn't. By itself, a fossil is a punctuation mark, an interjection, an exclamation, even, but it is not a word, or even a sentence, let alone a whole story

[yet] New fossil discoveries are fitted into the pre-existing story. We call these new discoveries 'missing links', as if the chain of ancestry and descent were a real object for our contemplation, and not what it really is: a completely human invention created after the fact, shaped to accord with human prejudices.

Henry Gee, *In Search of Deep Time*



The events of Deep Time – fossils – are so sparse, because an animal, once dead, only rarely becomes a fossil. A million years passed between one fossil of Pseudocivetta ingens and the next.

The process of fossilization and discovery is a concatenation of chance built upon chance. It's amazing that anything ever becomes a fossil at all.

Henry Gee, *In Search of Deep Time*

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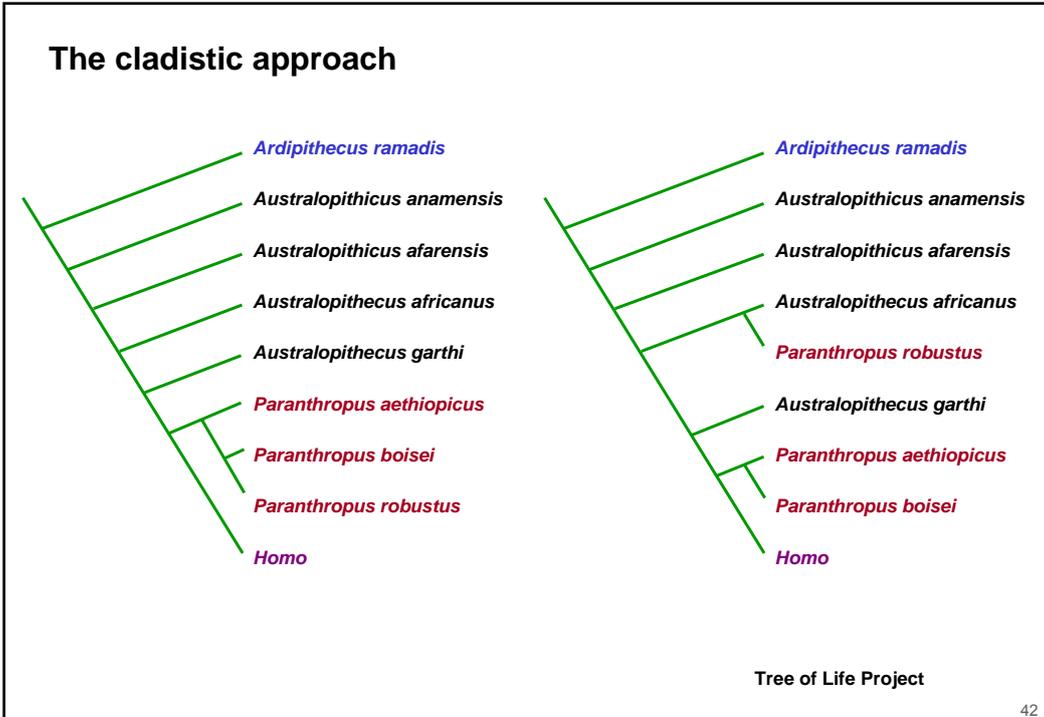
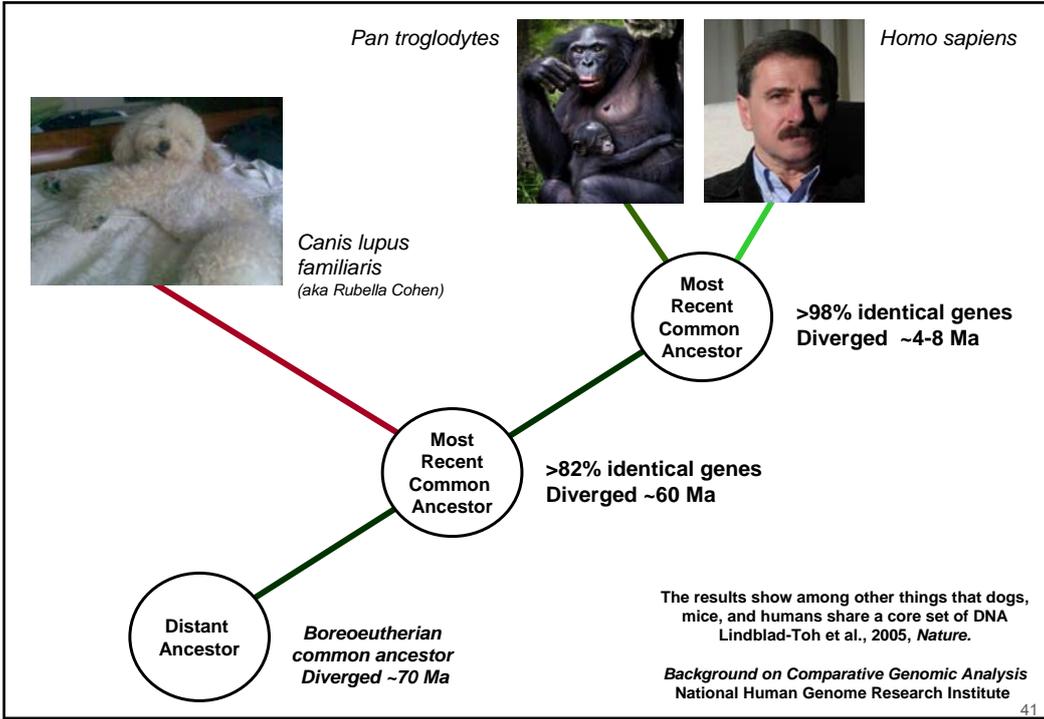
We
confidence
growing
hills;
starving,
God's good
old.

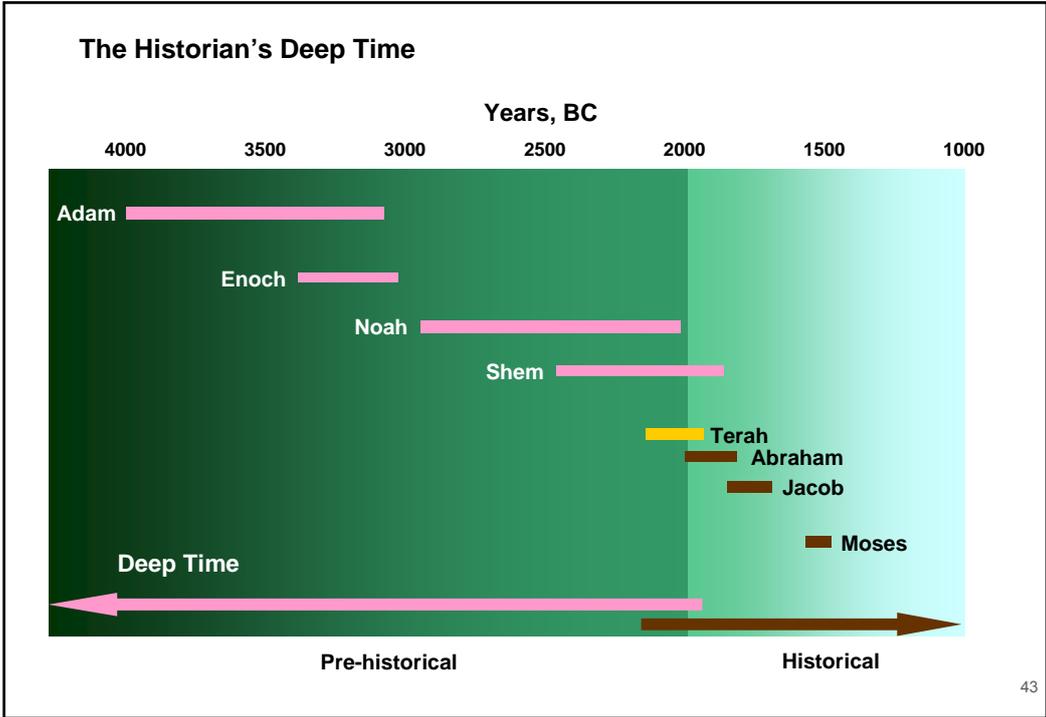
We to the seas and
confidence and growing the
he cost the in the hills;
for a moment
or a starving,
the armed and
the
on the God's good
the with
to the and
the of the old.

38

<p>France</p> <p>defend our Island</p> <p>shall fight</p> <p>streets hills</p> <p>Empire</p> <p>British Fleet</p> <p>in God's good</p> <p>time</p> <p>liberation of the old</p>	<p>We shall go on to the end, we shall fight in France, we shall fight on the seas and oceans, we shall fight with growing confidence and growing strength in the air, we shall defend our Island, whatever the cost may be, we shall fight on the beaches, we shall fight on the landing grounds, we shall fight in the fields and in the streets, we shall fight in the hills; we shall never surrender, and even if, which I do not for a moment believe, this Island or a large part of it were subjugated and starving, then our Empire beyond the seas, armed and guarded by the British Fleet, would carry on the struggle, until, in God's good time, the New World, with all its power and might, steps forth to the rescue and the liberation of the old.</p>
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<p>the British Fleet, grounds, we shall moment believe, this the air, we end, we shall the struggle, until, cost may be, growing strength in the seas, armed the hills; we might, steps forth fight in the and even if, we shall fight shall never surrender, we shall fight on the seas of the old. we shall fight time, the New Island or a our Empire beyond World, with all its power and on to the which I do and the liberation large part of on the beaches, and starving, then not for a We shall go shall fight in it were subjugated and oceans, we fight in France, fields and in to the rescue Island, whatever the in God's good and guarded by shall fight with would carry on growing confidence and on the landing the streets, we shall defend our</p>	<p>We shall go on to the end, we shall fight in France, we shall fight on the seas and oceans, we shall fight with growing confidence and growing strength in the air, we shall defend our Island, whatever the cost may be, we shall fight on the beaches, we shall fight on the landing grounds, we shall fight in the fields and in the streets, we shall fight in the hills; we shall never surrender, and even if, which I do not for a moment believe, this Island or a large part of it were subjugated and starving, then our Empire beyond the seas, armed and guarded by the British Fleet, would carry on the struggle, until, in God's good time, the New World, with all its power and might, steps forth to the rescue and the liberation of the old.</p>
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Hominid to Human

“Adam” or *Ardeipithicus* emerges ~7 Ma
Australopithecus emerges ~4 Ma
Homo emerges ~2 Ma.

“Mitochondrial Eve” may be *Ardipithecus ramadis* (“Uncle Ram”)

God’s dealings with Uncle Ram and Uncle Ram’s perception of God are unknown.

At some stage *Australopithecus* or *Homo* become self-aware and then God-aware.

Eventually “*Homo sapiens*” spawns “*Homo sapiens theologica*”

44

***What seest thou else in the dark backward and
abysm of time?***

Shakespeare's *The Tempest*

***Time is a great teacher, but unfortunately it
kills all its pupils.***

L. Hector Berlioz

***For a thousand years in your sight are like a day
that has just gone by.***

Ps 90:4; echoed in 2Pet 3:8