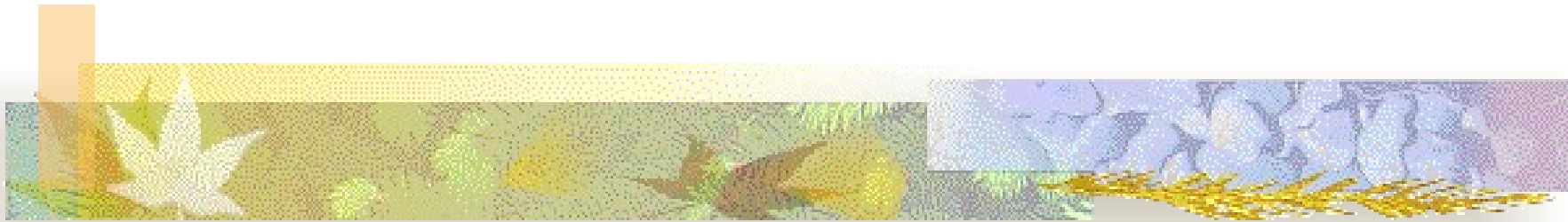


What Does Science Say About Creation? - Part 2 -



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Which Model Best Fits The Facts?

- Creation and Evolution are the only two models of origins
- Both models should be considered as equal alternatives and evaluated objectively in terms of their relative abilities to correlate and explain scientific data
- **The model that incorporates the most data and has the smallest number of unresolved issues is the most likely to be true**



Looking At The Scientific Evidence

- Origin of matter, energy and natural law
- Origin of the solar system
- Teleology – study of evidences of design in nature, e.g. Anthropic Principle
- Classification of biological organisms
- Natural selection and mutations
(+ vestigial organs)



The Scientific Evidence - 2


- Origin of man
- Origin of life (probability)
- The fossil record
- Geologic ages – Uniformitarianism vs. Catastrophism
- Age of the world (earth/universe)



Conditions For Increasing Complexity in an Open System

- Necessary, but not sufficient conditions:
 1. Open System
 2. Available Energy
- Additional requirements:
 3. Mechanism for storing and converting incoming energy
 4. Program (to “direct” the growth of complexity)

Keeping Score (so far ...)

	<u>Creation</u>	<u>Evolution</u>
Laws of nature & Thermodynamics		
TOTAL =	1	0



#2 - Origin of Our Solar System

- Predictions of evolution model:
 - Origin of universe by the Big Bang
 - Solar system is one of many
 - Earth, moon and planets should have same composition and structure

- Predictions of creation model:
 - Solar system is unique
 - Earth, moon and planets each created for a specific purpose, each with a distinctive composition and structure
 - Only the earth would be found to have a hydrosphere capable of supporting life
 - Only the earth would be found to have an atmosphere capable of supporting life
 - Evidence of decay and catastrophism would be found on other planets and moons





Some Facts on Astronomy

- Astronomy – science dealing with study of the sun, the moon, the planets and the stars
- Solar system – sun (a star) plus eight planets
- Stars -> galaxies -> galaxy clusters
- Universe consists of ~100 billion galaxies
 - ~100 billion stars per galaxy
- Solar system is part of Milky Way Galaxy
- Andromeda, our closest galaxy is ~ 2 million light years away
- Proxima Centauri, our closest star is ~ 4.5 light years away

Galaxies



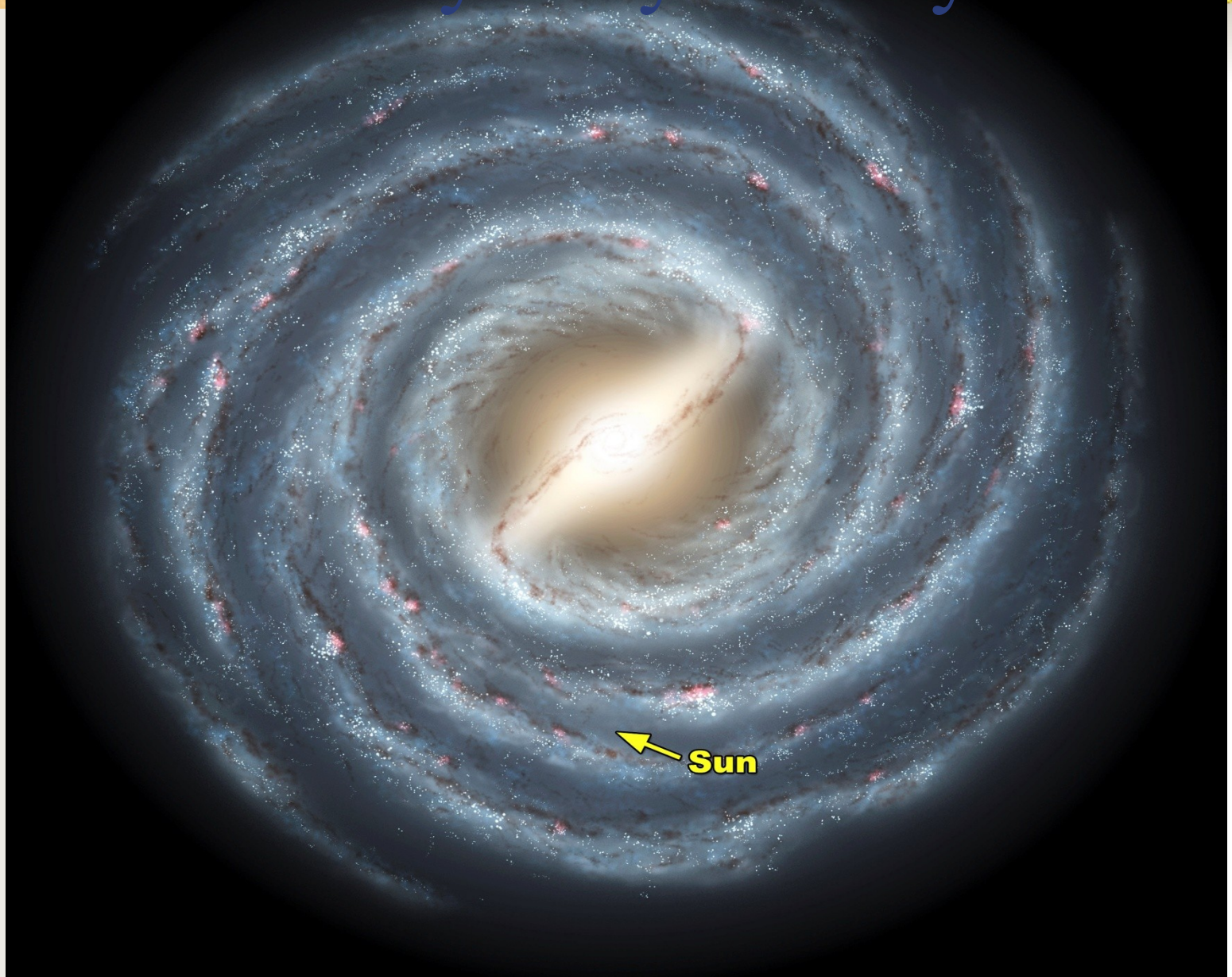
Spiral Galaxy



Galaxy M81



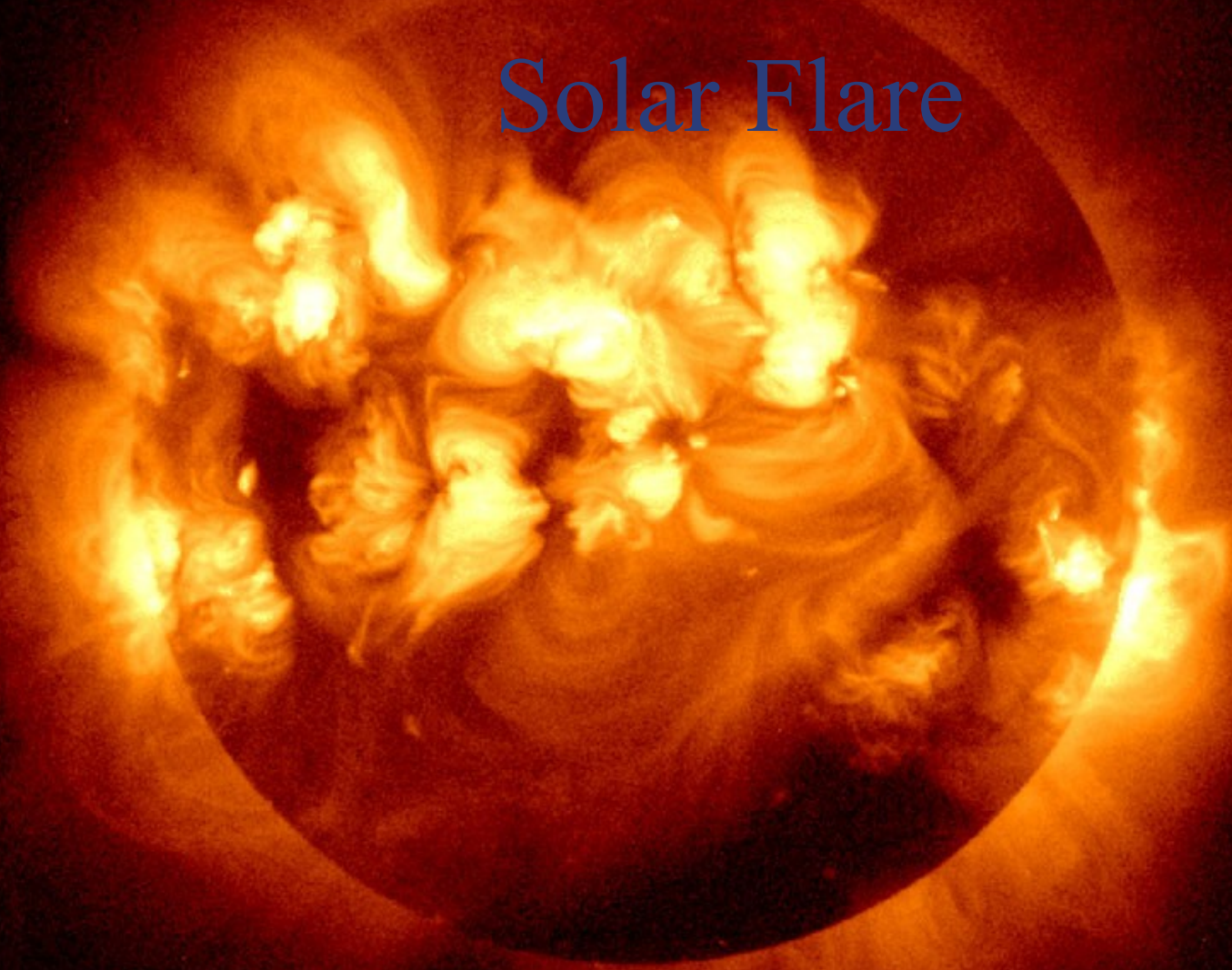
Milky Way Galaxy



Milky Way Center



Solar Flare





Big Bang Theory

- All energy and matter was crammed into a cosmic egg (or primeval atom)
 - Where did it come from?
 - How did it get there?
- Suddenly exploded/expanded at great speed
 - Nothing -> today's universe?
 - First there was nothing – then there was a Big Bang!
- Two elements were created:
 - Hydrogen (75%)
 - Helium (25%)



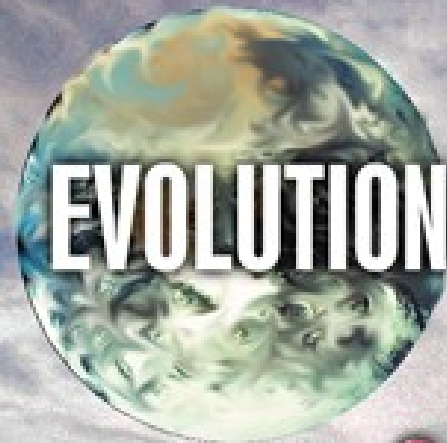
Big Bang Theory - 2

- These simple gases expanded
 - Perfect vacuum at very low temperature
- Everything in the universe evolved from these simple gases:
 - Stars, galaxies, solar system
 - All living things, including man with:
 - 30 trillion cells of about 200 different kinds
 - Brain with 12 billion brain cells and 120 trillion connections
- Chaos & Disorder -> Complex Universe

Chaos
&
Disorder



Simplicity
of H and He



Complex
Universe

Crab Nebula





Extra-Solar Planets?

- Solar planets
 - 4 terrestrial planets orbit close to the sun
 - 4 giant gas planets orbit farther away from sun
 - Expected to be the model for extra-solar planets
- Extra-solar planets
 - > 150 planets found orbiting other stars
 - Most detected by indirect means
 - Some “planets” may actually be brown dwarfs
 - Most are giant gas planets orbiting close to their star, even closer than Mercury to our sun



Secular Nebular Hypothesis Dead?

- “This new planet [orbiting Iota Horologii] adds to the suspicion that our solar system with its neat, circular, coplanar orbits, may be the exception rather than the rule” *Extrasolar planet discoverer **Geoffrey W. Marcy**,
quoted in Science News, Vol. 156 No. 7, p. 106*
- “. . . the theoreticians, who have labored long and hard to explain how our Solar System formed . . . are greatly concerned that the new systems have very little in common with the one we live in and clearly had a radically different process of generation”
David W. Hughes, Nature, Vol. 391, p. 652
- These extrasolar planets do not fit the secular theory of formation, i.e. the Nebular Hypothesis



Solar System Evolved?

- Based on statistical analysis and the evolution model:
 - One might expect to find many solar systems with planets and similar characteristics to our solar system
 - The Evolution model also assumes that the moon broke away from the earth
- What we observe:
 - Much evidence against Big Bang theory
 - Sun + 4 terrestrial planets + 4 large gaseous planets
 - 1 terrestrial planet (earth) capable of supporting life
 - Sun has 90+% of mass, planets have 90+% of angular momentum of solar system
 - Origin of moon not explainable by Evolution model

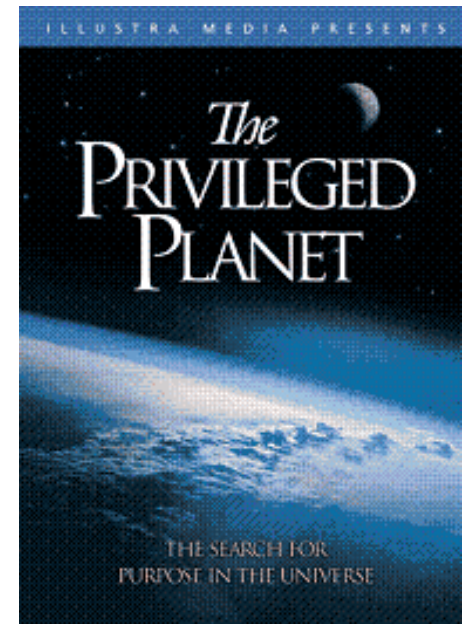


Planet Earth

The Earth is Special

- The Earth is the perfect distance from the sun
- Our moon is just the right size and distance from Earth
- Our moon's gravity stabilizes the Earth's rotation
- Our position in our galaxy is just so
- Our sun is its precise mass and composition
- Our atmosphere is clear allowing investigation of the cosmos

All of these factors (and many more), are not only necessary for Earth's habitability; they also have been surprisingly crucial for scientists to measure and make discoveries about the universe.



The Solar System Was Created

- What we find:
 - Our solar system is unique
 - Earth and moon have different structure and composition and could not have come from the same celestial “ancestor”
 - The chemical makeup of the moon rocks is different from that of rocks on the earth
- Predictions of the creation model are exactly confirmed by moon landings and space probes



Keeping Score

	<u>Creation</u>	<u>Evolution</u>
Origin of Solar System	★	
TOTAL =	2	0

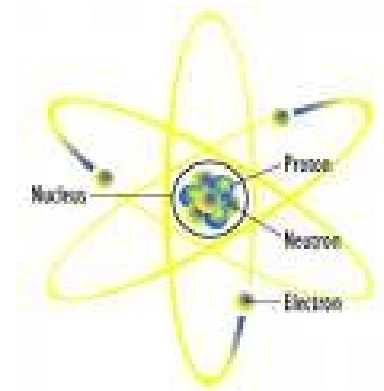


#3 – Teleology (Evidence of Design)

- Teleology is the study of evidences of design in nature, e.g. Anthropic Principle
 - The word “teleology” is derived from the Greek word for end or purpose
- Evolution predicts:
 - Mechanistic self-ordering process in nature
 - Mutations provide random changes
 - Natural selection concentrates the beneficial features
- Creation predicts:
 - Evidence of design in nature
 - Carefully balanced equations, constants and properties of matter

The Anthropic Principle

- The Anthropic Principle states that the universe appears to be carefully designed for the well-being of mankind
- Some evidence of this found in nature:
 - Mass of proton
 - Gravitational force
 - Strength of electrical charges
 - How is total Solar Eclipse possible?
 - A “Just Right” Universe
 - > 100 precise universal constants





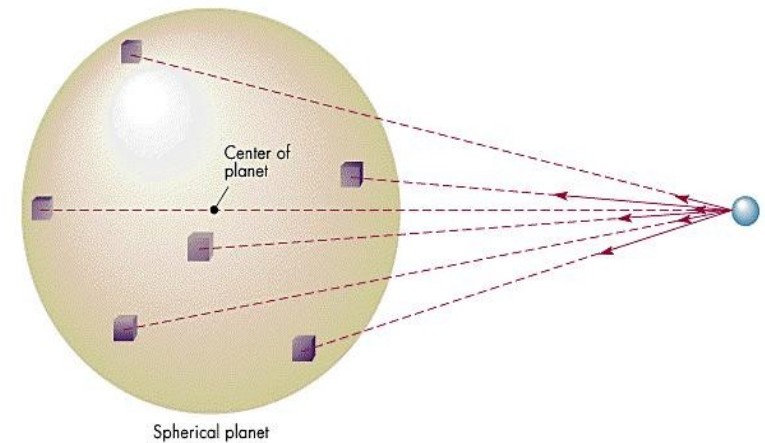
Mass of Proton

- Mass of proton is chosen for stability
- Mass of free neutron is slightly heavier than that of a proton, and it decays to a proton, electron, and an antineutrino with a half life of 12 minutes. Free neutrons cannot persist in nature.
- If the mass of a proton were increased by just 0.2 %, it would decay into a neutron, a positron and a neutrino. This decay does not occur - if it did, hydrogen could not exist. Hydrogen is the dominant element of the universe. Without it, the universe could not exist

Evidence of a precise design!

Gravitation Force

- Gravitation force is inversely proportional to the square of the separation distance between the two masses. This fundamental force holds the universe together, controlling the orbits of all members of our planetary system.
- Why is the number not 1.99 or 2.01? Any value other than 2 would lead to an eventual catastrophic decay of orbits and of the entire universe



- = Particle of matter in planet; mass = M
- = Particle of matter outside planet; mass = m
- = Gravitational force between ■ and ● = $F_G = \frac{GMm}{d^2}$
- d = Distance between ■ and ●

Evidence of an essential design!



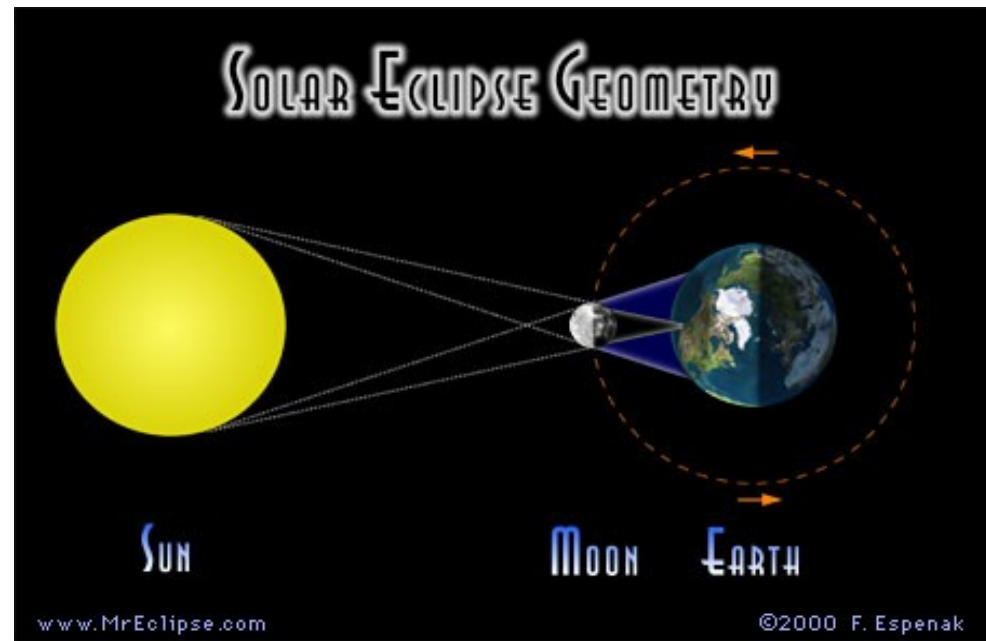
Strength of Electrical Charges

- The strength of electrical charges, i.e. the Coulomb force varies as the inverse square of the distance between the charges. Since the electrical force is much stronger than the gravitational force, it has been measured to an accuracy of 16 decimal places to be 2.0000000000000000

This reflects God's purposeful planning!

Total Solar Eclipse

- Sun completely obscured by moon
- Visible from narrow track on surface of earth
- Total eclipse possible because:
 - Sun's distance from earth is ~ 400 times moon's distance
 - Sun's diameter is ~ 400 times moon's diameter
- Total eclipse by design?



Total Solar Eclipse





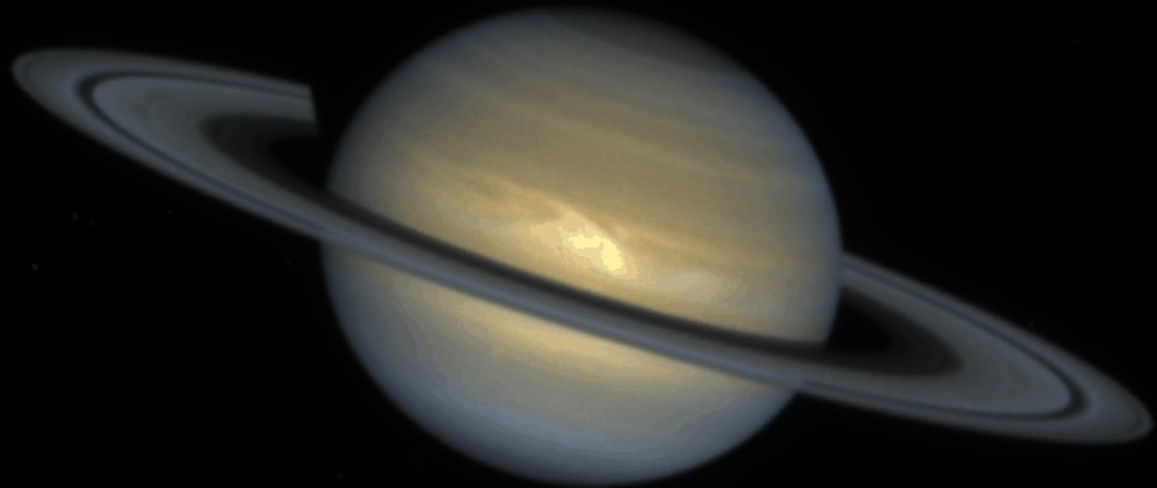
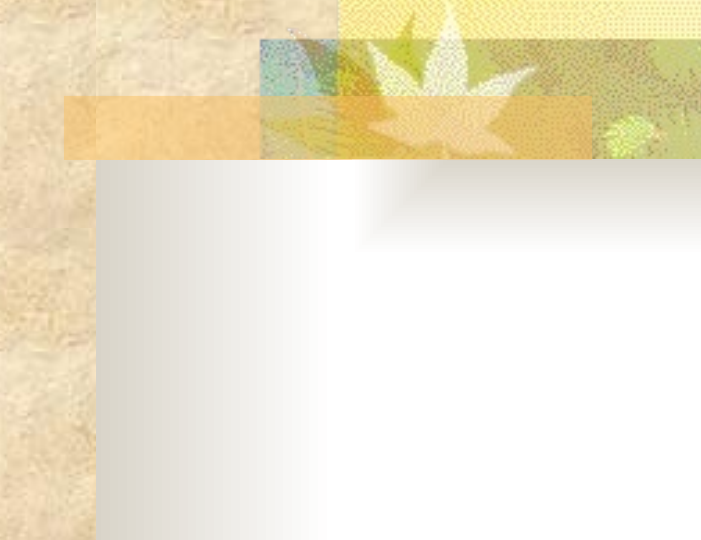
A “Just Right” Universe

- 35 Fine-tuned Parameters to the Universe, e.g.
 - Numerical constants in equations for gravity, electromagnetism, strong and weak nuclear forces
 - Ratio of proton to electron mass



A “Just Right” Universe

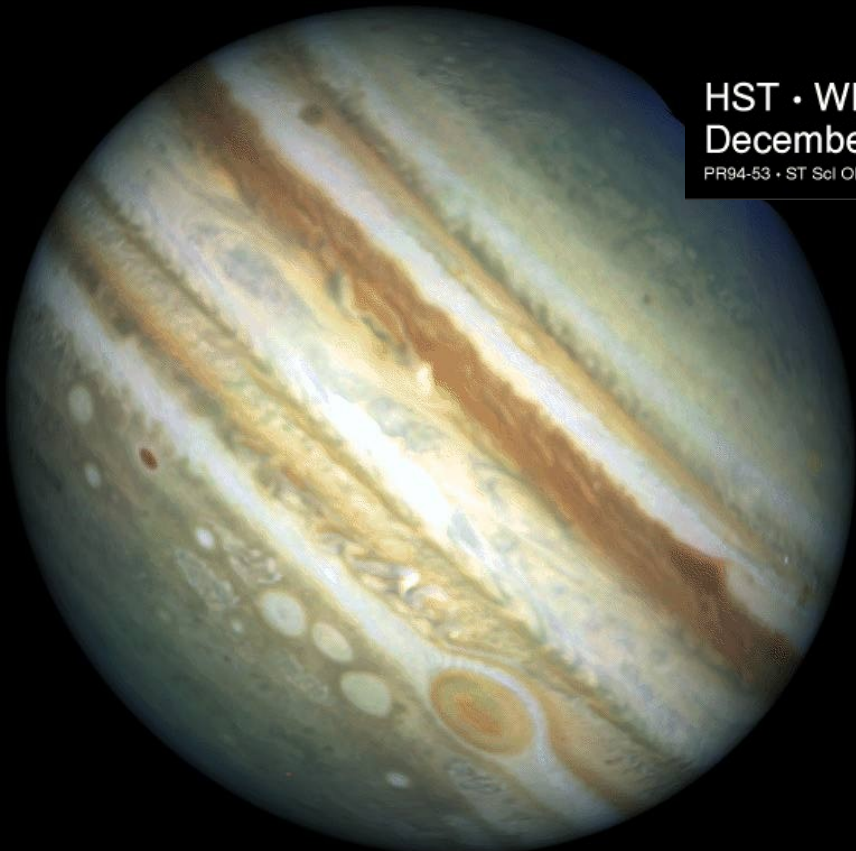
- 66 Fine-tuned Parameters to our Galaxy, Solar System, and Planet
 - Distance from the sun
 - Size, temperature, & type of sun
 - Size, axial tilt, rotation speed, moon, & composition of earth
 - Stability of Jupiter and Saturn



HST · WFPC2
December 1, 1994

PR94-53 · ST ScI OPO · December 1994 · R. Beebe (NMSU), NASA

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A “Just Right” Universe

- 10^{-53} - Probability of 80 fine-tuned parameters occurring by chance
- 10^{-166} - Probability of 128 fine-tuned parameters occurring by chance



A “Just Right” Universe

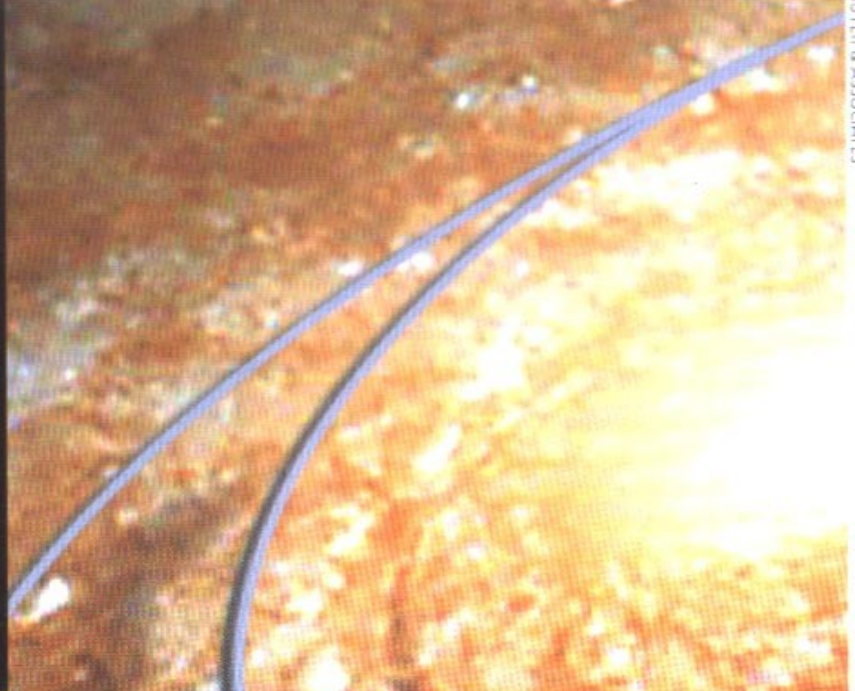
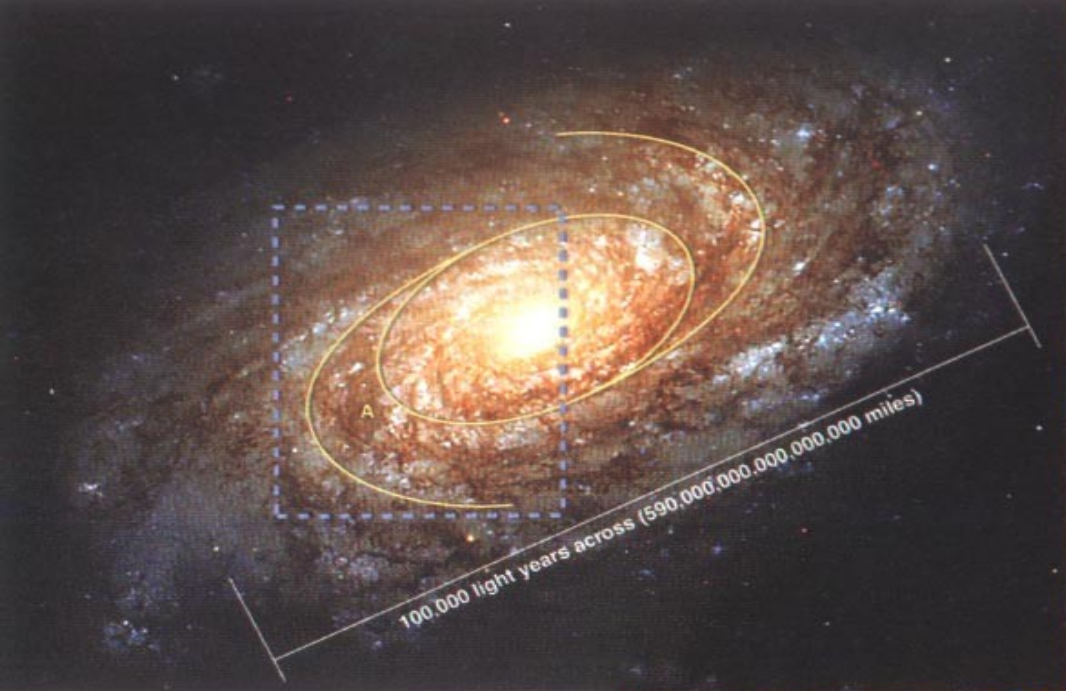
■ How Many Planets?

- 10^{22} - Upper limit for number of stars in the universe
- Assume 1 planet per star
- Therefore 10^{22} planets in the universe



A “Just Right” Universe

- Jupiter acts as a comet and asteroid magnet shielding earth from catastrophic collisions
- Our sun is located between spiral arms of the Milky Way Galaxy where there are fewer stars (less harmful radiation and disruptive gravity) and less gas and dust (we can see the rest of the galaxy and universe)



important for another reason. The spiral arms are loaded with gas and dust. If we were located within a spiral arm, such gas and dust would block our view of anything but the nearby stars and gas and dust clouds.

But our position *in between* spiral arms permits us to see the other parts of our galaxy and any of the other several hundred billion galaxies in the universe. That's why we can see, in King David's words, how "the heavens declare the glory of God."²

Astronomers have determined, for sure, that the heavens' message can only be read if one is sitting on a uniquely clear-viewed cosmic window




BETWEEN THE SPIRAL ARMS of our galaxy is where we gotta be: The silver bars




A “Just Right” Universe

- Since 1996, over 50 planets outside our solar system have been found
- Only 5% of stars have planets
- The planets are either too large, too close to their star, or with too erratic an orbit to harbor life
- Have the probabilities changed?




“As we survey all the evidence, the thought insistently arises that some supernatural agency - or rather Agency - must be involved. Is it possible that suddenly, without intending to, we have stumbled upon **scientific proof** of the existence of a Supreme Being?” Was it God who stepped in and so providentially crafted the cosmos for our benefit?

George Greenstein



"...how surprising it is that the laws of nature and the initial conditions of the universe should allow for the existence of beings who could observe it. Life as we know it would be impossible if any one of several physical quantities had slightly different values."

- Professor Steven Weinberg
(*Nobel Laureate in High Energy Physics [a field of science that deals with the very early universe], writing in the journal "Scientific American".*)



A common sense interpretation of the facts suggests that a superintellect has monkeyed with physics, as well as with chemistry and biology, and that there are no blind forces worth speaking about in nature. The numbers one calculates from the facts seem to me so overwhelming as to put this conclusion almost beyond question.

Fred Hoyle, Astronomer



What Does Evolution Say?

- Evolution is unable to deal with such permanent properties of nature
- Max Planck (1858-1947), a Nobel Prize winner and founder of modern physics, stated:
 - “According to everything taught by the exact sciences about the immense realm of nature, a certain order prevails - one independent of the human mind ... this order can be formulated in terms of purposeful activity. There is evidence of an intelligent order of the universe to which both man and nature are subservient.”

Keeping Score

	<u>Creation</u>	<u>Evolution</u>
Teleology (Design)	★	
TOTAL =	3	0

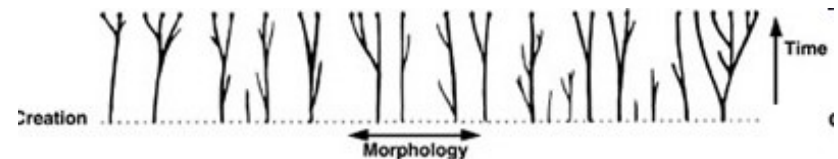
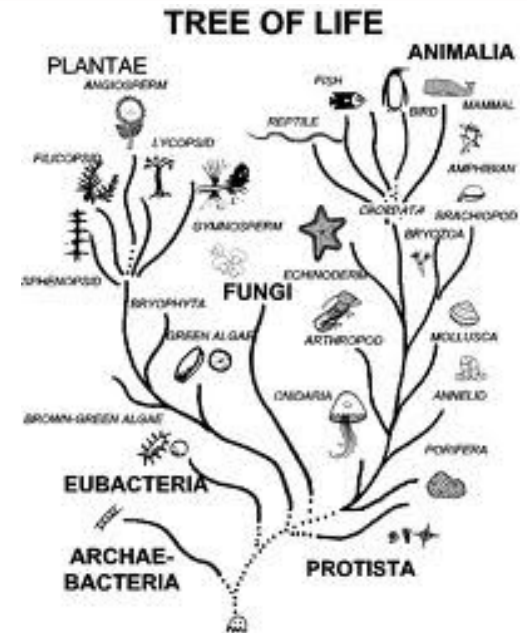
#4 – Classification of Biological Organisms

■ Evolution model predicts:

- A continuum of all forms of life
- No classification system would work

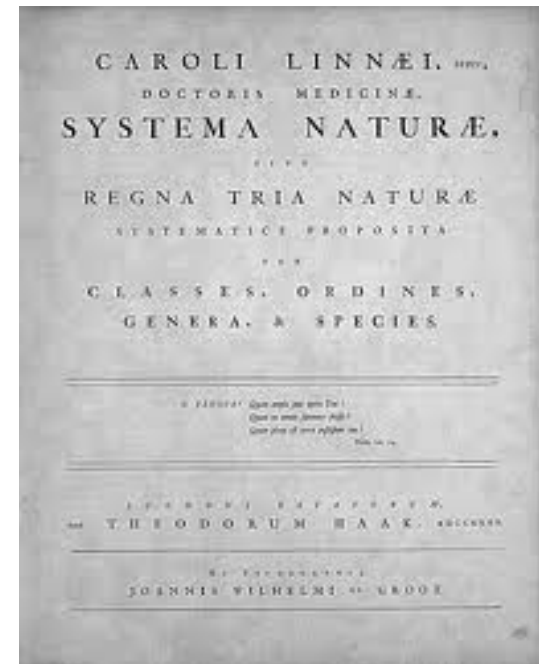
■ Creation model predicts:

- An array of clear, but distinct organisms
 - Similar structures for similar functions, e.g. eyes
 - Different structures for different functions, e.g. gills for fish, lungs for man
- Taxonomy science possible
 - Distinct kinds/species



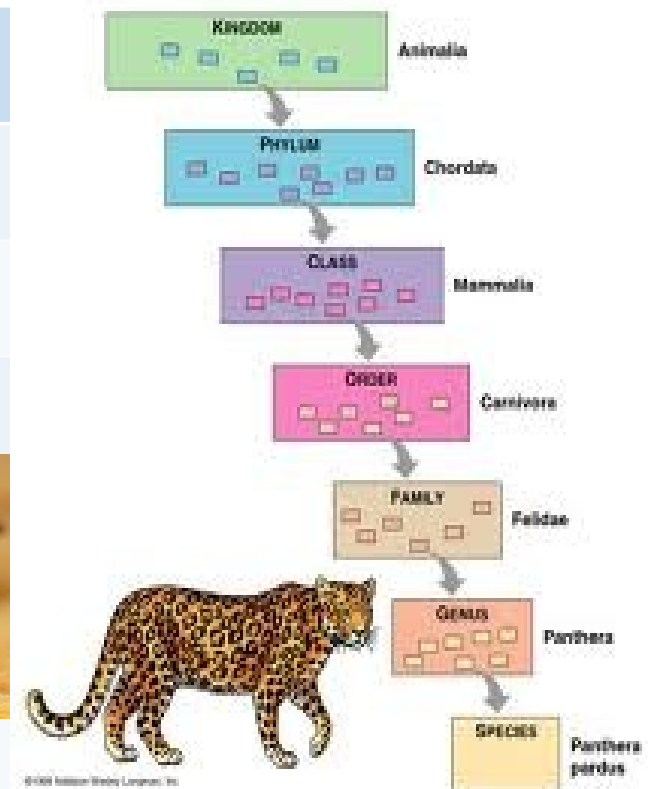
Historical Biological Classification

- **Aristotle**, 384-324 BC
 - First classification into animals and plants
 - Sub-classification into “units” of cats, horses, oaks, etc.
- **Genera** (Genus singular)
 - Latin for “groups”
- **Carolus Linnaeus**, 1707-1778 AD
 - Introduced binomial taxonomy
 - Each species has a distinct name
 - Genus + Species, e.g. **Homo Sapiens**



Taxonomic Hierarchy

<u>Name</u>	<u>Example</u>
Phylum	Arthropoda
Class	Insecta (Hexapoda)
Order	Hymenoptera
Family	Apidae
Genus	Apis
Species	Apis Mellifera (honey bee)





The Science of Taxonomy

- The classification system introduced by **Carolus Linnaeus** applies to plants/animals in today's world as well as to extinct plants and animals
 - Linnaeus' classification system still works today
 - Consistent with the Creation account in **Gen. 1**
- The science of taxonomy is a problem for Evolution
 - A continuum of life forms does not exist
 - Credible Intermediates have not been observed and/or identified in the fossils

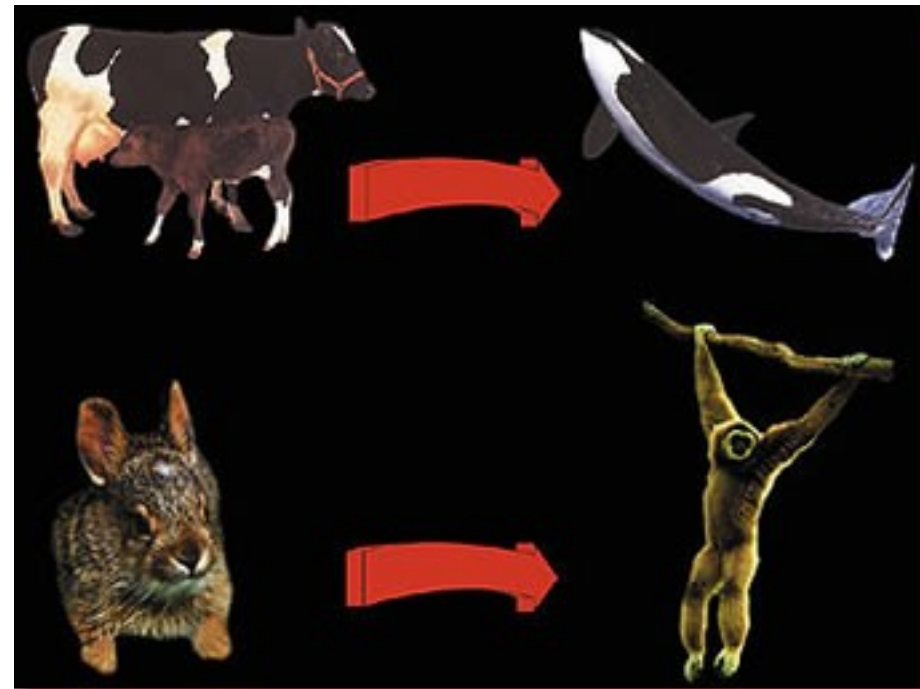


Quoting an Evolutionist

- The anti-creationist, **Niles Eldredge**, wrote in 1985:
 - “And though a few of these eighteenth-century systematists had vaguely evolutionary notions, nearly all were devoutly and orthodoxly religious. They saw the order in their material, the grand pattern of similarity running through the entire organic realm, as evidence of God’s plan of creation.”

Recent Molecular Studies

“Comparisons that have been made of proteins, rRNA and genes reveal that creatures that are allegedly close relatives according to the theory of evolution are actually totally distinct from each other. Various studies grouped rabbits with primates instead of rodents, and cows with whales instead of horses.”



Elizabeth Pennisi, Science Vol. 284, May 1999

Classification Observations


- What we do see is:
 - Variations within kinds, e.g. varieties of cats, dogs, cows, horses, mankind
 - No new kinds produced
 - Some species become extinct
 - Like begets like
 - Cambrian fossils largely reflect today's classification system
- Observations consistent with Creation

HORSE VARIATIONS



Chalk up one for the Creation Model!

Keeping Score

	<u>Creation</u>	<u>Evolution</u>
Classification of biological organisms		
TOTAL =	4	0



#5 - Natural Selection and Mutations

- Evolution model predicts:
 - Small variations between members of a species would confer differing degrees of advantage or disadvantage in the struggle for existence
 - Those with significant advantages would be favored
 - New and higher types of organisms would emerge
 - A mutation (structural change in a gene) is the source of genetic variation
 - Mutations are primarily beneficial



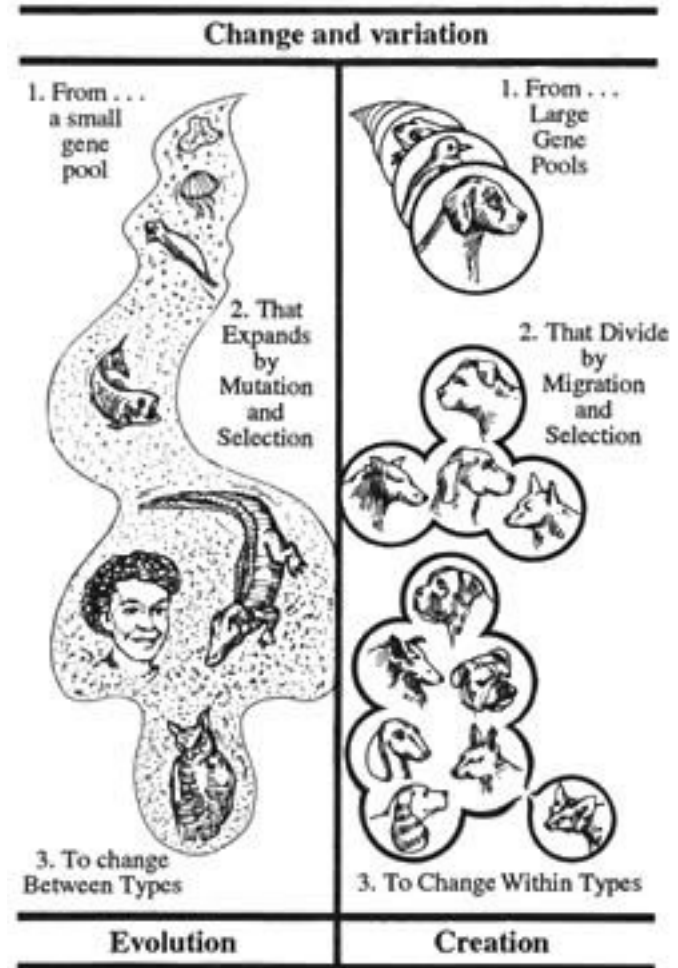
Natural Selection and Mutations - 2

- Creation model predicts:
 - Variation and natural selection work to assure genetic integrity and to enable the organism to survive in nature
 - Characteristics can be adjusted, within limits, to changes in the environment
 - Mutations are primarily harmful

Change and Variation

What is the more logical inference from our observations?

1. Unlimited change from one kind to another? (Evolution)
2. Limited variation within kinds? (Creation)



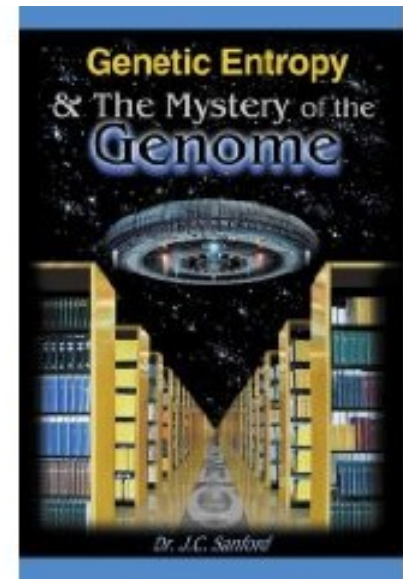
Changes Over the Years?

- Darwin predicted that fossils would show changes in fossil record over the years
- 25-million-year-old termite fossils in amber
 - Identical to termites living today
- “It has become abundantly clear that the fossil record will not confirm this part of Darwin’s predictions.”
 - **Niles Eldredge**, Paleontologist



Genetic Entropy

- John Sanford, (ex) Cornell Professor
- Questioning the “Primary Axiom”
 - We are the result of random genetic mutations + natural selection
 - An Axiom is untestable, yet is accepted as absolute truth
- The reality
 - Mutations mostly harmful, e.g. cancer
 - Random mutations destroy information
 - Selection can't eliminate all bad mutations
 - Good mutations are mostly unselectable



Human Genome Deterioration

- No form of selection can stop genetic deterioration, only slow it down
- Living organisms show a process of devolution called genetic entropy
- Mutation accumulation causes genomic deterioration
- The Primary Axiom is impossible!

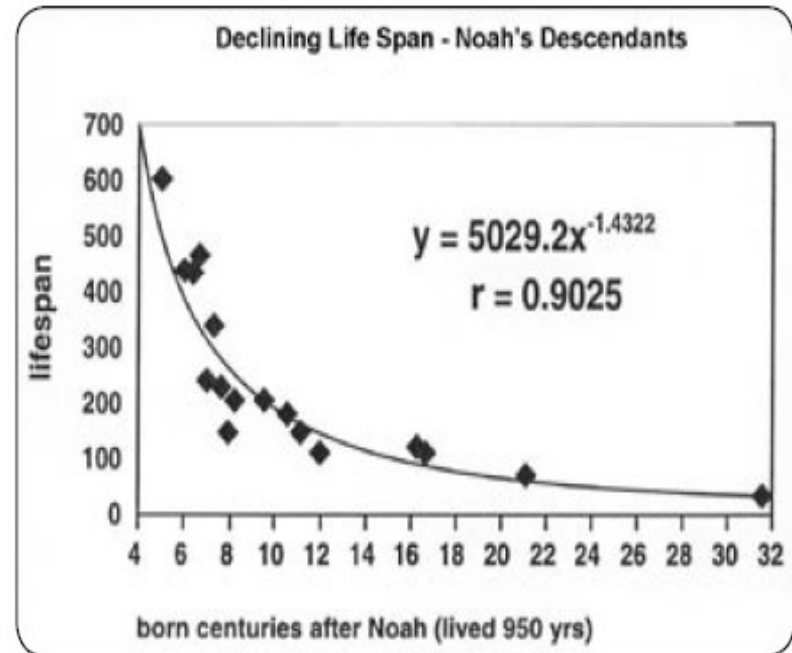


Figure 7. Human life spans in early history (from Sanford, 2005). When Biblical life spans are plotted against time for generations after Noah, a dramatic decline in life expectancy is shown. The curve shows a strong evidence of biological decay. It reveals an exponential curve following the formula $y = 5029.2x^{-1.43}$. The curve is consistent with the concept of genomic degeneration caused by mutation accumulation.



What We See Happening Today

- Variations within a kind, e.g. peppered moth “evolving” to darker color as tree trunks grew darker with pollutants during industrial revolution
- Adaptation to the environment for survival
- Mutations are harmful to the organism
- Mutations are random and not directed
- Mutations are rare in occurrence
- Mutations almost always generate misfits which soon die out



“Origin of Species” Never Observed

- All of Darwin’s evidences turn out to be descriptions of creative adaptation, not origin
- According to **Niles Eldridge** (1986):
 - “Darwin, it is now become commonplace to acknowledge, never really addressed the ‘origin of species’ in his book of that title.”
 - Darwin never really cited the origin of a new species by natural selection
- The British evolutionist **Colin Patterson** noted:
 - “No one has ever produced a species by mechanisms of natural selection. No one has ever gotten near it and most of the current argument in neo-Darwinism is about this question.”



On Mutations and Natural Selection


- The philosopher **Janus Koestler** noted that:
 - “The public continues to believe that Darwin provided all the relevant answers by the magic formula of random mutations plus natural selection - quite unaware of the fact that random mutations turned out to be irrelevant and natural selections a tautology.”
- Mutations turn out to be rare events, and most of those are bad
 - They do not lead to improvements in the species, as Evolution predicts



Vestigial Organs

- At one time there were claimed to be 180 such organs in man - appendix, tonsils, thymus gland, pituitary gland, etc.
- No useless vestiges of structures which were useful in a former evolutionary stage
- All “vestigial” organs in man now appear to have a use
- The argument that vestigial organs prove evolution is no longer regarded as valid

Keeping Score

	<u>Creation</u>	<u>Evolution</u>
Mutations/Selection		
TOTAL =	5	0