

An Inclusive Science and Faith Message for the Media

**Dr. Hank D. Voss, hnvoss@taylor.edu
Taylor University, Upland, IN
(Please email or talk with me
during conference Cell 765 618 3813)
Note: Taylor University and ASA not responsible for content.**



*American Scientific Affiliation (ASA) conference,
July 21, 2012, San Diego, CA*

The Heavens Declare the Glory of God! Psalm 19:1

The Greatest Question:

Origins...Where did we / everything come from???

- Problem and Background
- A Converging Baseline Creation (BC) Message Using Gen. 1
- Exo-planets and early earth without “form and void”
- First Day 1 Light and Giant Impact
- Days 0-6 and Mainstream Science
- Huge Media/Society Implications

Origins Problem

(Secular) Random Evolution (RE)

Theistic Evolution (TE)

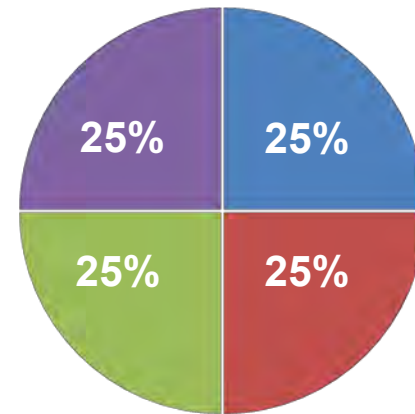
Old Earth Creation (OE)

Young Earth Creation (YE)

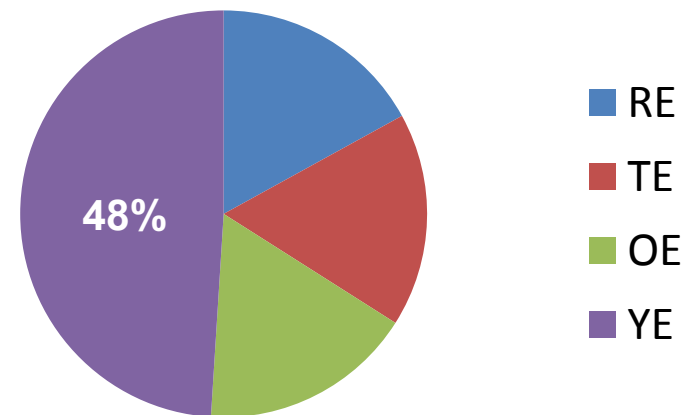
Poll surprising considering strong promotion of RE (>Billions \$/yr.) by:

- Media (video, radio, news, ...)
- Government Science and Education
- Professional Societies (bylaws, journals)
- Public Universities
- K-12 Education
- Museums, Zoos, National Parks

US College Adult Belief Origins



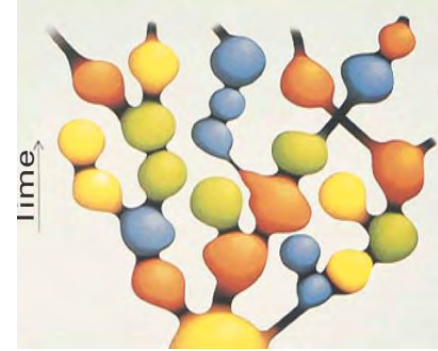
General Adult Belief Origins



A Large Market for Connecting Mainstream Science to Bible/Belief?

“Limitations of Science”

Mainstream Speculations: Pseudoscience



Attempts to substitute “God” (Science as a Religion)

- A Quantum Fluctuation creates the Universe
- Multiverses to explain our fine-tuned Universe
- Godless Grand Unified Theory of Everything (GUT)
- Abiogenesis of Life in Galaxy (Drake Equation)
- The Higgs Boson: The “God Particle” (SM particle)
- And more presented in our classes and textbooks



Good Science follows the Data (Points to a God! or?)

- The Universe has a young 13.7B beginning (was repulsive to secular scientist)
- The Universe will expand forever without contraction (Only one beginning)
- Our universe is specially crafted/fine tuned (Anthropic Principle: Multiverse?)
- The Earth-moon formed with a highly improbable collision (Catastrophe)

1 Cor. 13:12 For now we see through a glass darkly but then face to face. For now I know in part...

The Plumb line of Truth

Interpretation of science

Interpretation of the Bible

False ideas,
Steady State,
Eternal cosmos,
Uniformity (No
Catastrophes:
Continental Drift,
Asteroid Impacts),
Moon Origin, All
Mechanistic, No
Dimensions/other
realms, ...??

False Interpretations
(hermeneutics), Cults,
Geocentric, thunder,
medicine/ surgery, Y2K,
relativity, time not
variable, Size of Universe,
Age of Universe, Gen 1?,
Hominids, ...??

Convergence-Science-Bible??

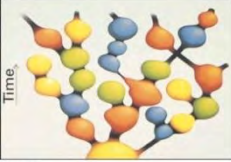





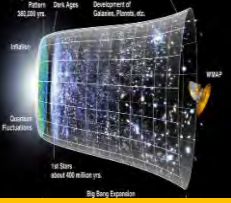
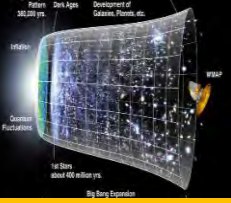
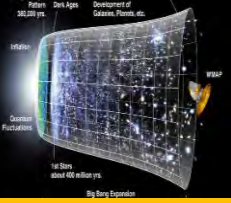
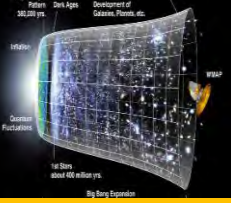

Christian Worldview encouraged search for order in Science Renaissance

RE, TE, OE, and YE Reference (see ASA web site for definitions)

Interpretation		Age	Other Genesis 1/Secular Associations	Key Advocates
Young Earth Creation	YE	<10 K	Schroeder Time, Time Acceleration, Appearance of Age Literal Genesis 1 Physical Creation	ICR, AIG, CRS
Old Earth Creation	OE	13.7 B	Progressive Creation, Day-Age, Gap theory, ID Literal Genesis 1 Physical Creation	RTB, ASA, CRC
Theistic Evolution	TE	13.7 B	Framework, Cosmic Temple, Poetic, Myth, ID Non literal Genesis 1 Physical Creation, Functional	ASA, Bio-Logos, CRC
Random Evolution (Secular)	RE	13.7 B	Exogenesis, Panspermia, Extraterrestrial Implant	Secular, Academic, SETI

- Is it not better if Genesis 1 describes BOTH a literal sequence of physical creation events and a more abstract layer of spiritual, poetic, and ancient cultural meaning?
- Genesis 1 sets the foundation for Biblical Interpretation and shows God's attributes (omniscience, omnipotence, omnipresence, and omnibenevolent). In addition, our fundamental cultural Worldview is shaped by the reality of God and scripture. Genesis 1 is stronger if it is Both literally and functionally correct (Inspiration).
- Baseline Creation (BC) Message Objectives:
 - To humbly understand truth with harmony. Eph. 4:25, "*Speak truth each one of you with his neighbor*", Ps. 19:1-4 "The Heavens declare the Glory of God"
 - Motivate Christian students to pursue geoscience and STEM Fields
 - Motivate the public to understand that mainstream scientific data can strongly underpin Creation
 - For Media Impact need a unified cohesive theme (Exciting Storyline Script)⁶

25 parallels between Genesis 1 "Storyline" and Mainstream Science

Rev. 8/4/12	Genesis/Bible Events	Main Ref	Bible/Old Commentary	Image	(Gy BP) Mainstream Science Events
1	Other realms or dimensions, One Creator God before cosmos (transcendent)	Gen 1:1,2 Tim 1:9, Tts 1:2, 1 Cr 2:7	Gen 1:1 In the beginning God created the heavens and earth. 2 Tim 1:9 This grace before the beginning of time		(Before time) Other Dimensions, Numerous universes ("bubbles"), The Multiverse
2	<i>Ex nihilo</i> beginning of universe made out of nothing (Novel Ancient view)	Gen 1:1 Heb 11:3	Nahmanides Commentary , 1250 AD: The initial creation produced an entity so thin it had no substance to it. It was the only physical creation ever to occur and was all concentrated within the speck of space that was the entire universe just following its creation. As the universe expanded from the size of the initial miniscule space, the primordial substanceless substance changed into matter as we know it. Time starts with the appearance of matter.		(13.7B) Big Bang, Beginning out of nothing, Singularity, Quantum Fluctuation, ?
3	Beginning of Space, Time, Forces, (Nahmanides Commentary, NC)	Gen 1:1,2 Pet 3:5, Heb 11:3	Time starts with the appearance of matter.		General Relativity, "Big Bang" (Note that Bang was not chaotic but a highly crafted and low entropy controlled
4	Beginning of Mass and Energy, (NC)	Gen 1:1, Heb 11:3	Time starts with the appearance of matter.		E=mc ² , General Relativity, Big Bang,
5	Laws of Physics: Instant Creation	Gen 1:1, Col 1:16	Time starts with the appearance of matter.		Unknown? First Cause?
6	Initial Conditions, Information, Low Entropy, controlled expansion	Gen 1:1, Col 1:16	Heb 11: 3 What is seen was not made out of what was visible.		Unknown? Where did the information come from?
7	ZAP! Instant creation, No universe to relatively large universe	Gen 1:1	Col 1:16 For by him all things were created: ... visible and invisible		Inflation to explain CBR and flatness, Instant increase of size of universe by 60 orders of magnitude
8	Expansion, stretched out like a tent	Ps 104:2, Jer. 10:12, 51:15, Zech. 12:1	Isa 40:22 , 42:5,45:12, He stretches out the heavens like a canopy, and spreads them out like a tent to live in.		Hubble Law plus vacuum acceleration
9	Earth without form, void	Gen 1:2	Gen 1:2 And the earth was without form, and void.		(4.57B) Exo-planets, Chaos, Wasteland probability
10	Water on face of earth, The Spirit of God located on the Surface of Earth gives a viewing reference point for understanding Creation Days	Gen 1: 2	Gen 1:2 And the Spirit of God was hovering over the waters. 2 Pet 3:5 the heavens existed and the earth was formed out of water and by water.		Watery and Ocean Planets (Super Earths)
11	Darkness on face of earth	Gen 1:2, Job 38:9	Gen 1:2 And darkness was upon the face of the deep. Job 38:9 "when I made the clouds its garment and wrapped it in thick darkness"		Exoplanet thick first atmosphere-clouds, Hadean Period; H ₂ , He, H ₂ O, CO ₂ , N ₂ , NH ₃ , CH ₄ , CL, S, About 100+ atm. like Venus with clouds

"Day 0" Creation and Unfolding of Cosmos

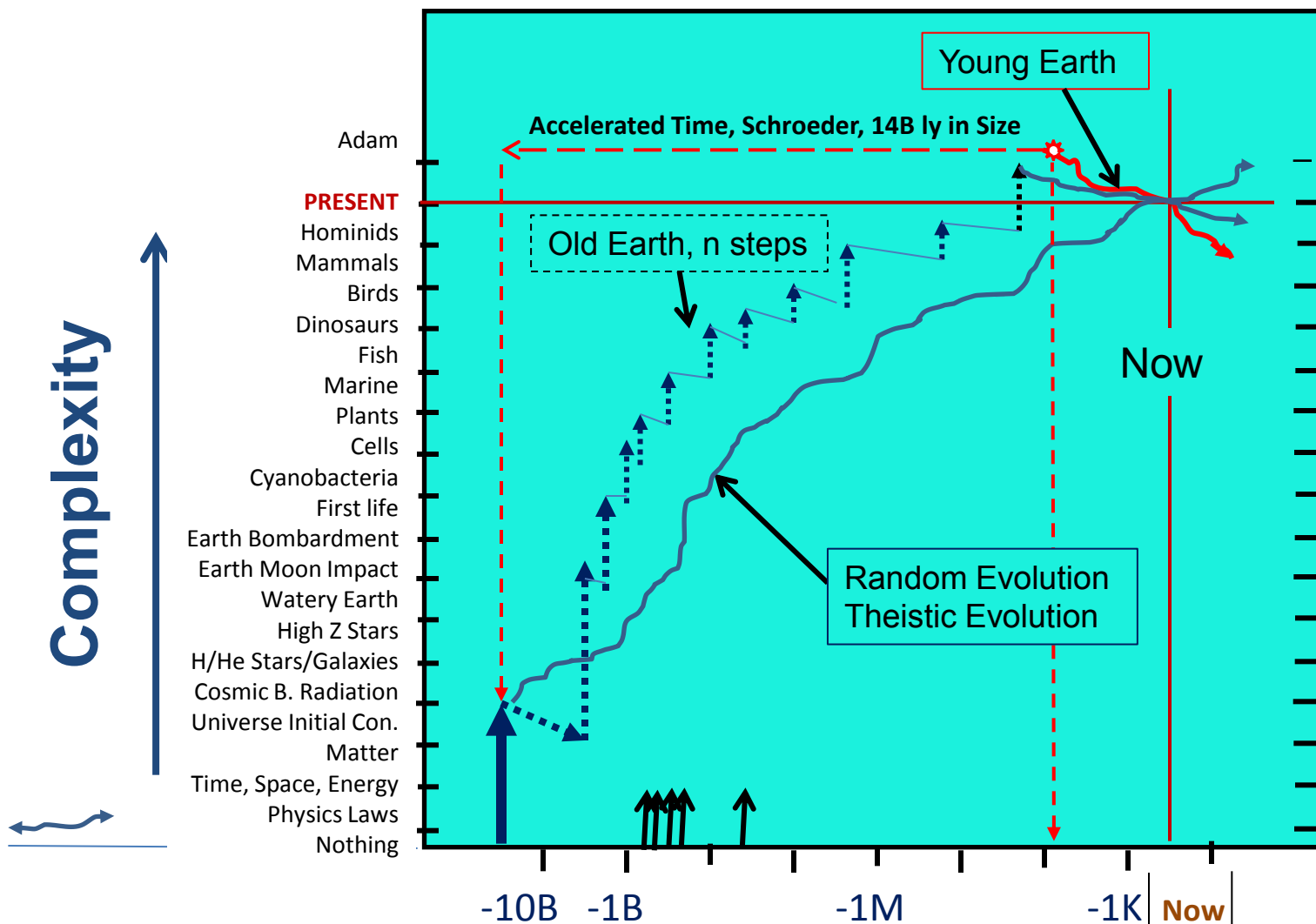
Universe Creation and Unfolding

25 parallels between Genesis 1 "Storyline" and Mainstream Science Continued

<div style="display: flex; flex-direction: column; align-items: center; justify-content: space-around;"> <div style="background-color: #f0f0f0; padding: 2px;">Human Day 0</div> <div style="background-color: #d3d3d3; padding: 2px;">Fish Day 5</div> <div style="background-color: #c0c0c0; padding: 2px;">View Day 4</div> <div style="background-color: #a0a0a0; padding: 2px;">Land/Plants Day 3</div> <div style="background-color: #808080; padding: 2px;">Water Day 2</div> <div style="background-color: #606060; padding: 2px;">LIGHT Day 1</div> </div>	12	Day 1 First Light on earth	Gen 1: 3	<i>Gen 1:3 And God said, "Let there be light," and there was light.</i>		(4.5 B) Giant Impact, Earth Brighter than the Sun for few days, earth structure reborn, moon created with stability	Hadean	
	13	Day 1 Beginning of days	Gen 1:4,5	<i>Gen 1:4,5 and he separated the light from the darkness. God called the light "day," and the darkness he called "night."</i>		Earth Spin Rate increased rapidly to 5hrs giving the First Day,		
	14	Day 1 First evening and morning	Gen 1:5	<i>Gen 1:5 And there was evening, and there was morning - the first day.</i>			1 st Evening (thick darkness) to morning with new day/night periods	Archean
	15	Day 2 Atmosphere Water	Gen 1:6	<i>2 Peter 3:5the earth was formed out of water and by water, Gen 1:6-8 And God said, "Let there be an expanse between the waters to separate water from water."</i>		4.5-3.8 B Early icy asteroid impacts, Late early bombardment, lunar cataclysm		
	16	Day 2 Atmospheric balance, Water Cycle, Clouds Above (translucent)	Gen 1:6	<i>So God made the expanse and separated the water under the expanse from the water above it.</i>		(3.8B) New Atmosphere with Water, H2O Habitable Zone established for life, Clouds, First life, Extremophiles		
	17	Day 2 Livable Atmosphere created	Gen 1:8			(3.2 B), Cyanobacteria for Atmosphere O2 generation, Stromatolites,		
	18	Day 2 Global Ocean	Gen 1:7					Proterozoic
	19	Day 3 one land mass	Gen 1:9,10	<i>Gen 1:9 And God said, "Let the water under the sky be gathered to one place, and let dry ground appear."</i>		(1.8 B) Convection causes uplift, one land mass Colombia/Rodina Supercontinents, Plate Tectonics		
	20	Day 3 plants on land	Gen 1:11,12	<i>Gen 1:11 Then God said, "Let the land produce vegetation: seed bearing plants and trees on the land that bear fruit with seed in it"</i>		(1B) Eukaryotes, Protista, Green Algae, Plants on Land begin	Paleozoic	
	21	Day 4 Observe sun, moon, stars	Gen 1:14-18	<i>Gen 1:16 God made two great lights - the greater light to govern the day and the lesser light to govern the night. He also made the stars.</i>		(530M) CO2 sequestered, Transparent atmosphere, Cambrian Explosion, Trilobites, Eye for detailed vision		
	22	Day 5 Great Fish, creatures	Gen 1:20-22	<i>Gen 1:20 And God said, "Let the water teem with living creatures"</i>		(450M) Great fish in seas (Ordovician)	Mesozoic	
	23	Day 5 Birds, (Reptiles)	Gen 1:20-22	<i>Gen 1:20 "Let birds fly above the earth across the expanse of the sky."</i>		(200M) Dinosaurs and Birds, DNA association archosars		
	24	Day 6 Mammals, Cattle	Gen 1:24,25	<i>Gen 1:24 And God said, "Let the land produce living creatures according to their kinds: livestock, creatures that move along the ground, and wild animals"</i>		(65M) Cenozoic, Mammals, Hominids	Cenozoic	
	25	Day 6 Humans and conscience	Gen 1:26,27	<i>Gen 1:26 Then God said, "Let us make man in our image, in our likeness, and let them rule ... over all the earth"</i>		(1M?) Hominids, First Humans		
	Day 7	Day 7 Rest, Decay, History	Gen 2:2	<i>Gen 1:26 Then God Rested</i>			Homo sapiens-sapiens, consciousness	

Universe Design Curves

Conceptual Complexity vs Time Curves

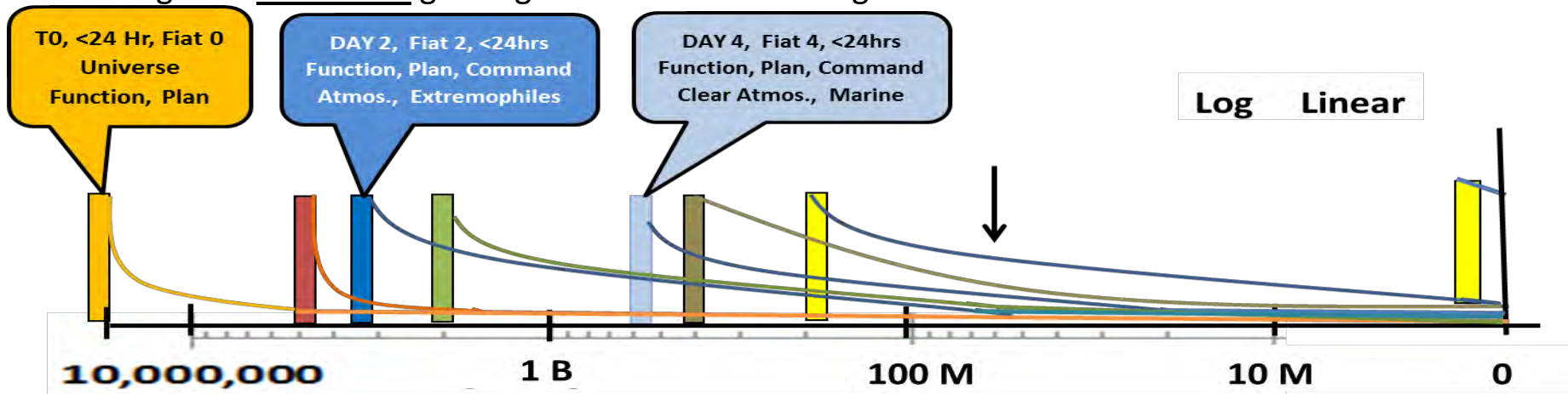


Baseline Creation (BC) Main Message

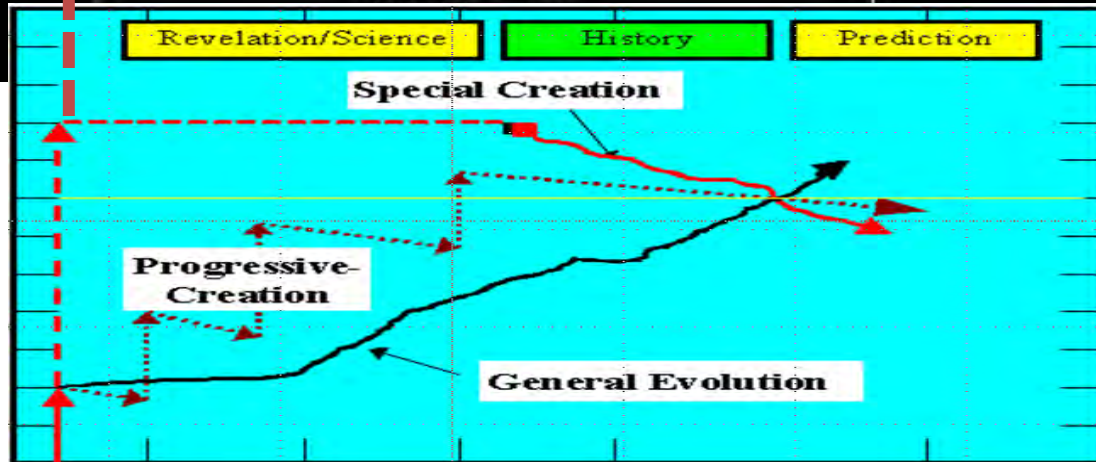
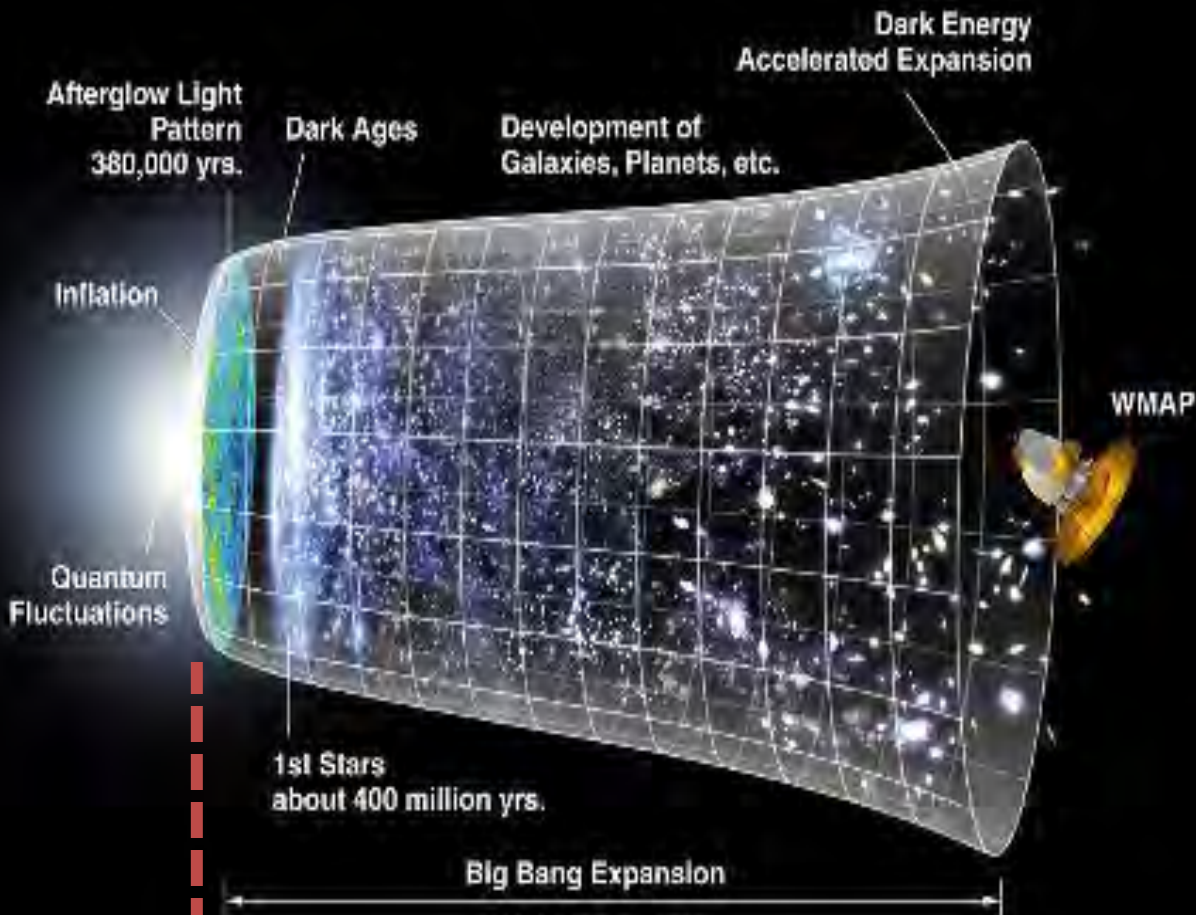
- Good Science: A Genesis 1 Update Consistent with portions of Mainstream Science and Reasons to Believe Creation Model (RTB, Ross). Twenty Gen 1 events in harmony with mainstream science.
- Inclusive of RE, TE, OE, and YE interpretations of Nature and Scripture
 - Genesis 1: Both Literal physical OE sequence and ancient TE overlay of Function
 - Genesis 1: Each “Fiat” or Command (<24 hrs, YE, Hayward) can also be connected to the Functional creation (Walton). In each Fiat God commands the functional “Curriculum” or “Blueprint” to be executed.
 - God can interact directly in nature or through control of “random events” from another “dimension”.

Semantics: “Highly Improbable” (CHANCE) ↔ Miracle (CREATION)

- Time: Relatively young 13.7 B Universe age. Day 1-6 each initiated by the 24 hr Fiat Command (Hayward) that provides time between the days (parenthesis) for damping dynamic responses.
 - Gen 1:1 Day 0; Universe Creation in seconds followed by natural unfolding
 - Gen 1:3 Day 1; Light: Brightness from earth greater than from our Sun (<24 hrs)
- Evangelical Students give high marks for connecting Bible and Science



Example of BC Model

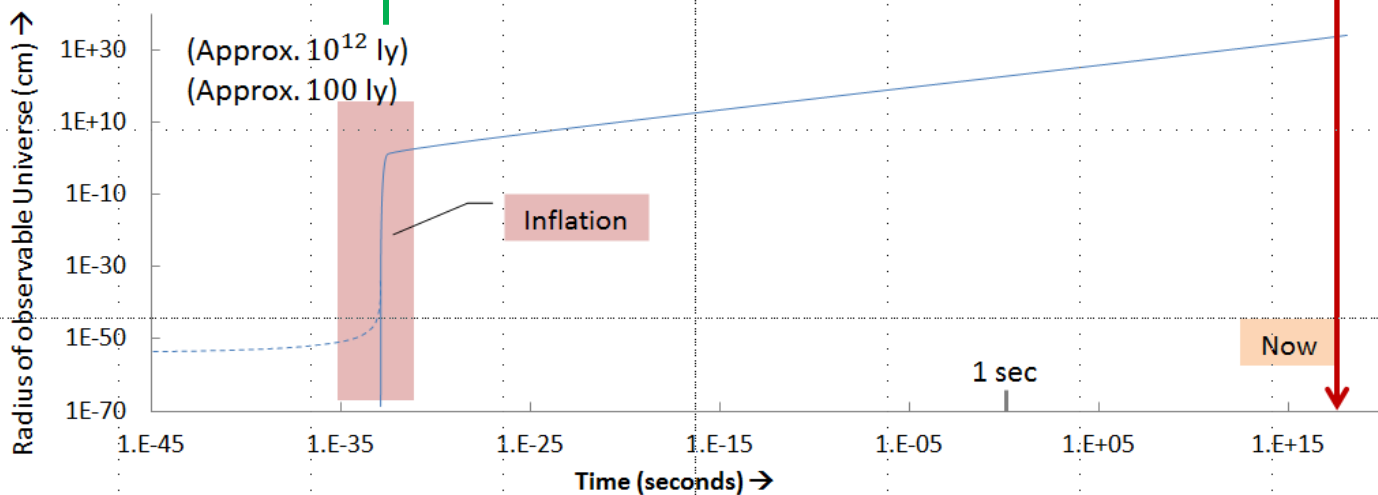
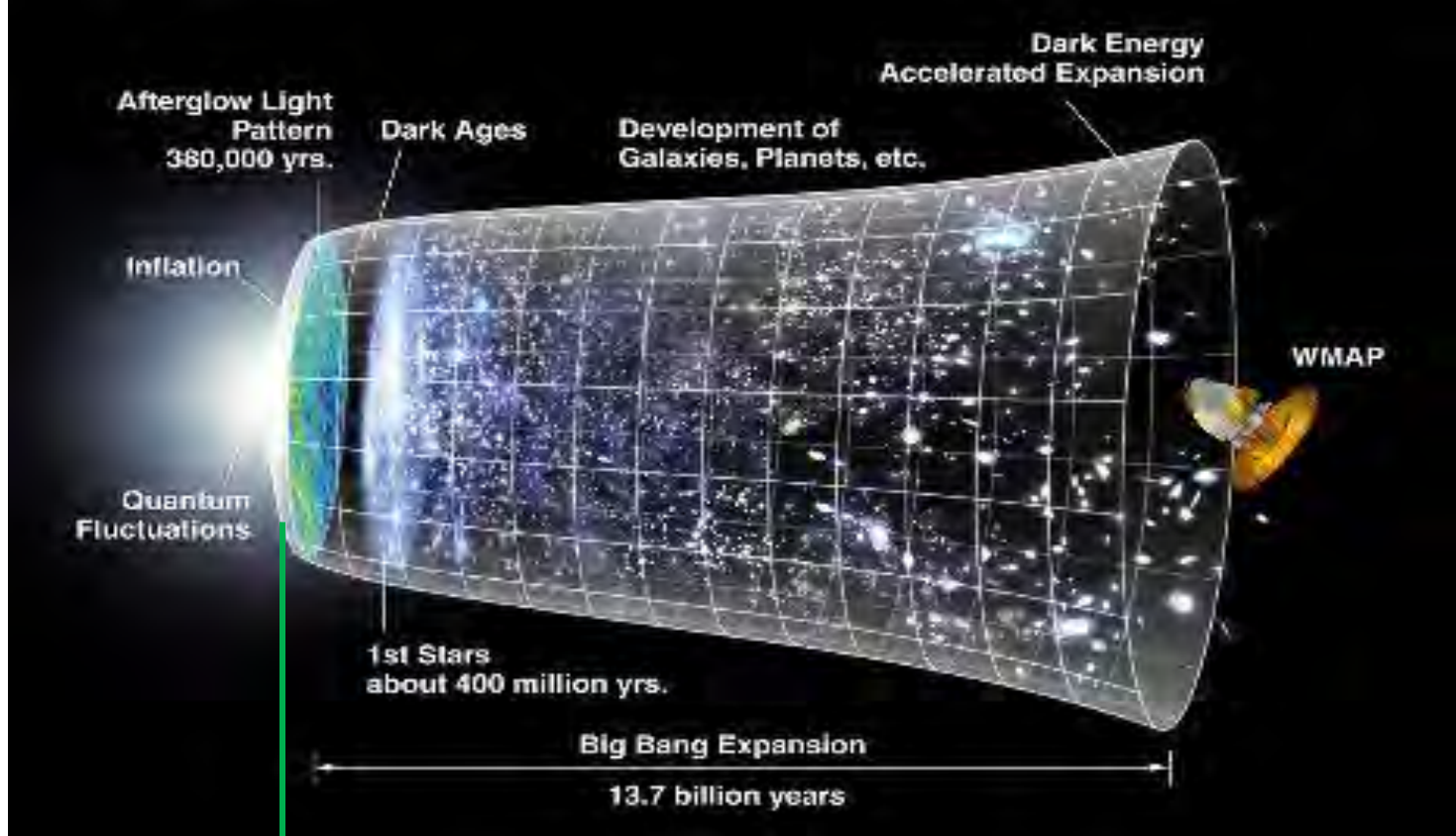


Mainstream Science

Gen. 1:1, “Day 0”
Heb. 11: 3, ESV
“By faith we understand that the universe was formed at God’s command, so that what is seen was not made out of what was visible”.

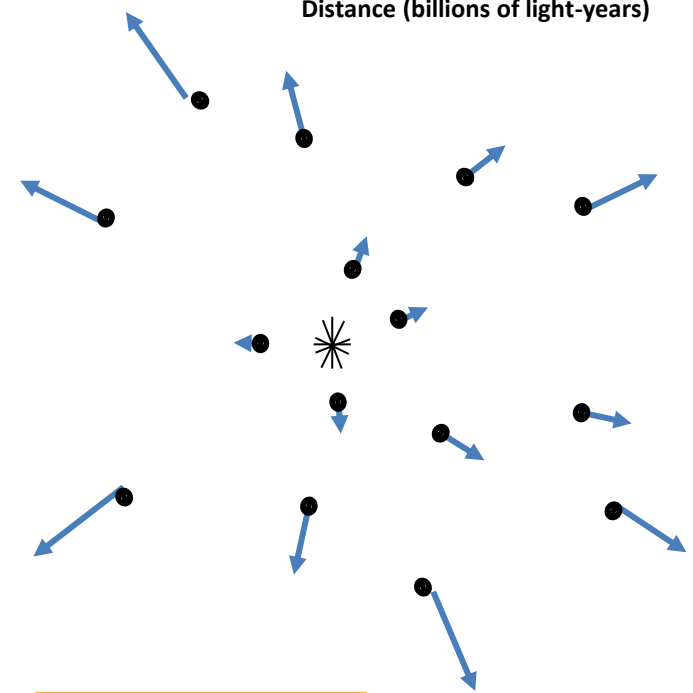
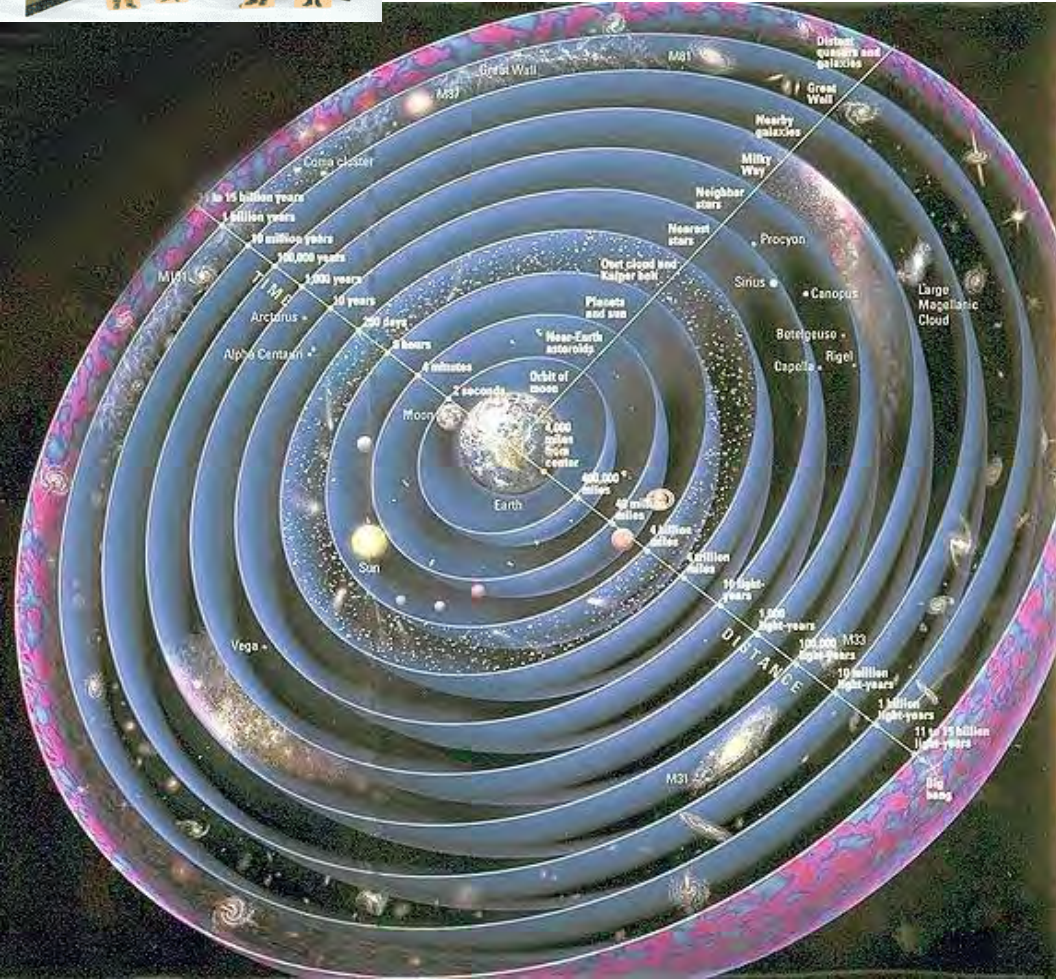
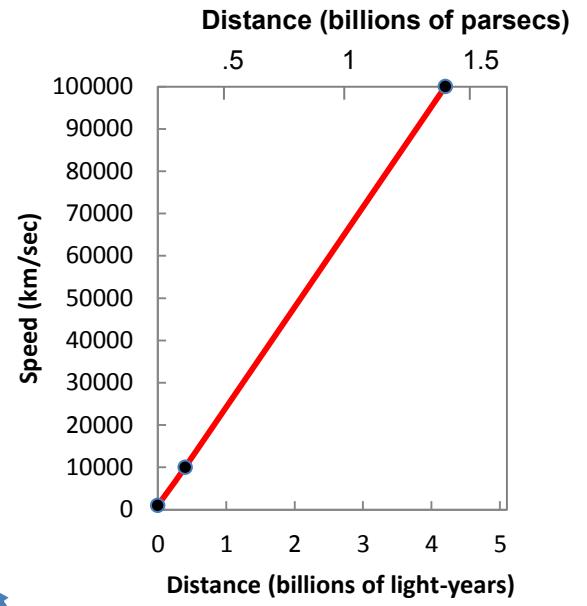
“Day 0”

Instant Expansion of Universe from Nothing





Hubble's Law. $v = H d$
 Equation of line $y = m x$

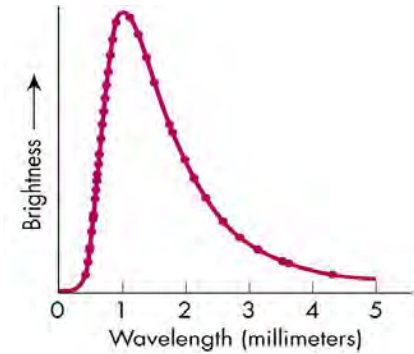
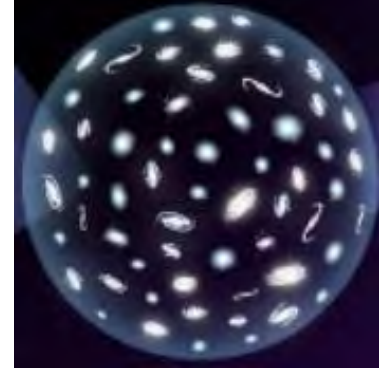


Geocentric view from any location,
<http://universe-review.ca/F02-cosmicbg.htm>

“Day 0”

Evidence For Rapid and Big Creation Event

- Galaxies Moving away from each other. The further away the faster (Hubble’s Law)
- Cosmic Background Microwave Radiation (CBR 2.7K) consistent with hot bright light in beginning
- Amount of H₂, He, Deuterium, isotopes consistent with Initial hot gas expanding
- General Theory of relativity predicts expanding (and accelerating) universe
- Biblical evidence (beginning, *ex nihilo*, stretches out, light,..)

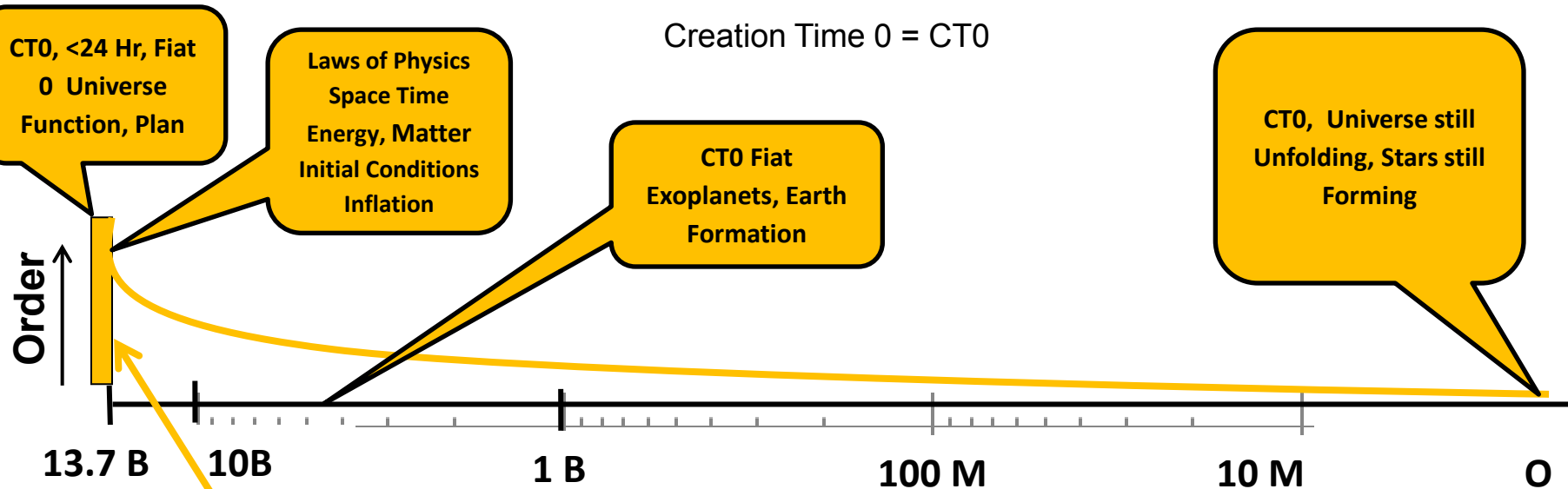


T0: "In the Beginning God Created the Heavens and the Earth"

"Day 0"

Universe Unfolding in a State of Decay

Creation Time 0 = CT0



CT0 Fiat
Ex nihilo
Light EM

CT0 Fiat
Cosmic CBR,
+0.3 M yrs.

CT0 Fiat
Accelerated
Expansion

(Mainstream Science)



1st Stars about 400 million yrs. Voss, ASA, 8/21/2012

Genesis 1:2 “And the earth was without form and void and darkness was upon the face of the deep”
Job 38:4-9 “Where were you when I laid the foundation of the earth? ...When I made a cloud its garment, And thick darkness its swaddling band”

We now know for certain the existence of planets around other stars: Exoplanets



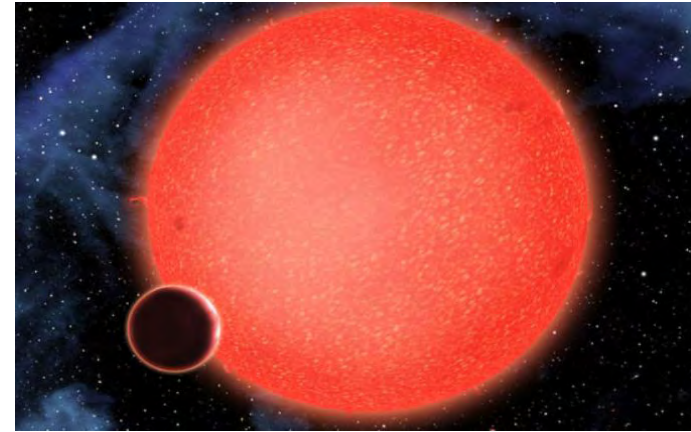
As of June, 777 confirmed planets
About 50% of Sun like stars have a planet

Maybe one in 10,000+ stars will have an earthlike planet in the Habitable Zone (HZ) with a global water ocean (now called Waterworld or Ocean planet).

Ocean Planets: GJ 1214 b, Kepler 22b

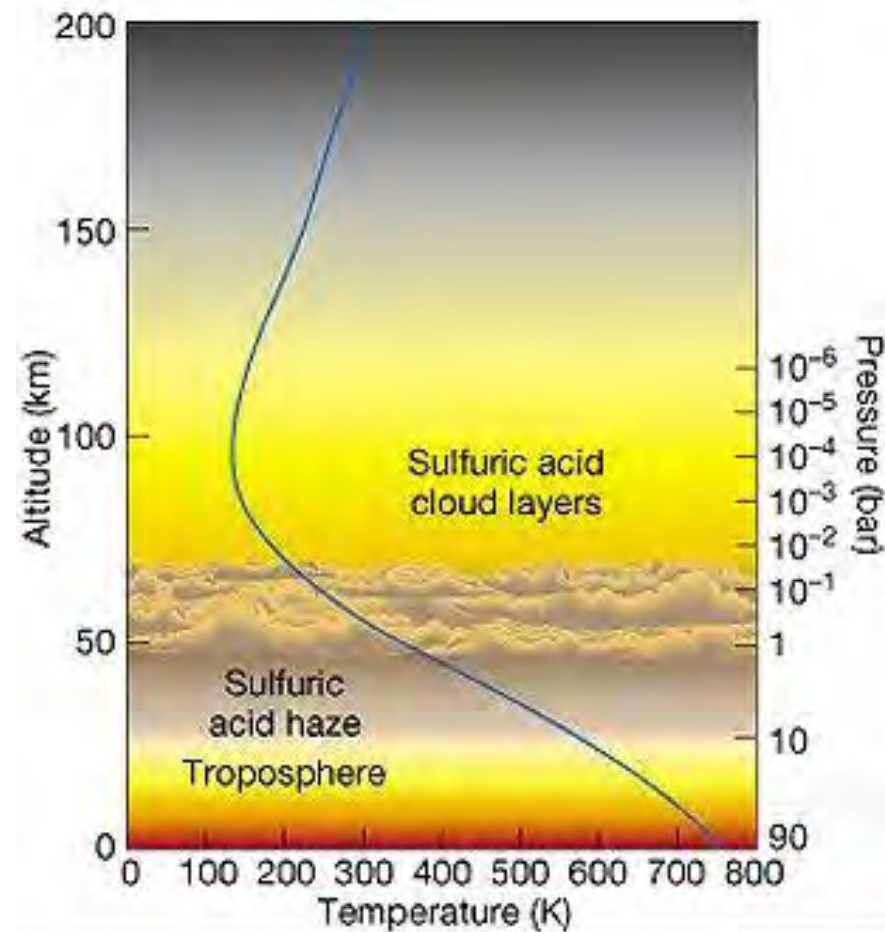
- An ocean planet (also termed a waterworld) is a type of planet whose surface is completely covered with an ocean of water.
- Planetary objects that form in the outer solar system begin as a comet-like mixture of roughly half water and half rock by mass. Simulations of solar system formation have shown that planets are likely to migrate inward or outward as they form, presenting the possibility that icy planets could move to orbits where their ice melts into liquid form, turning them into ocean planets.

(Description from Wikipedia)



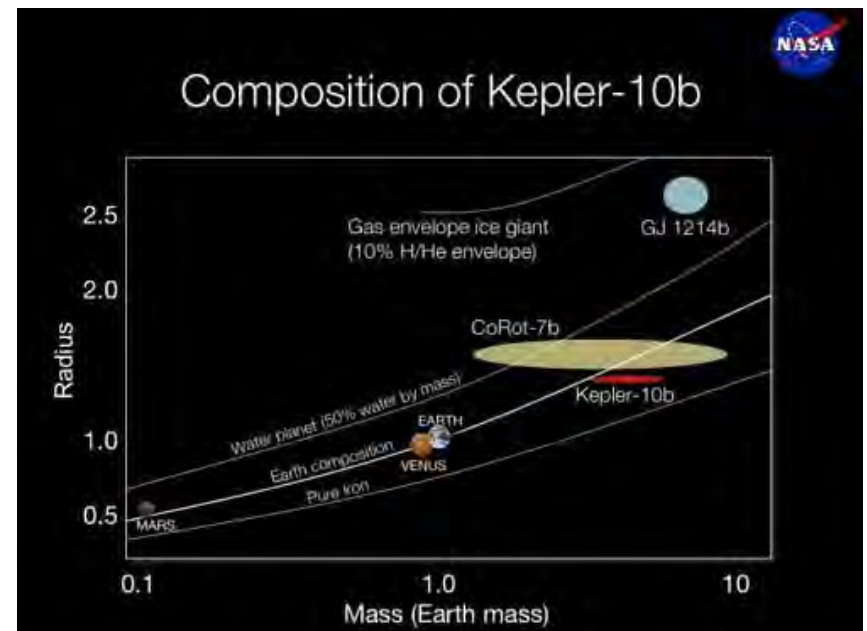
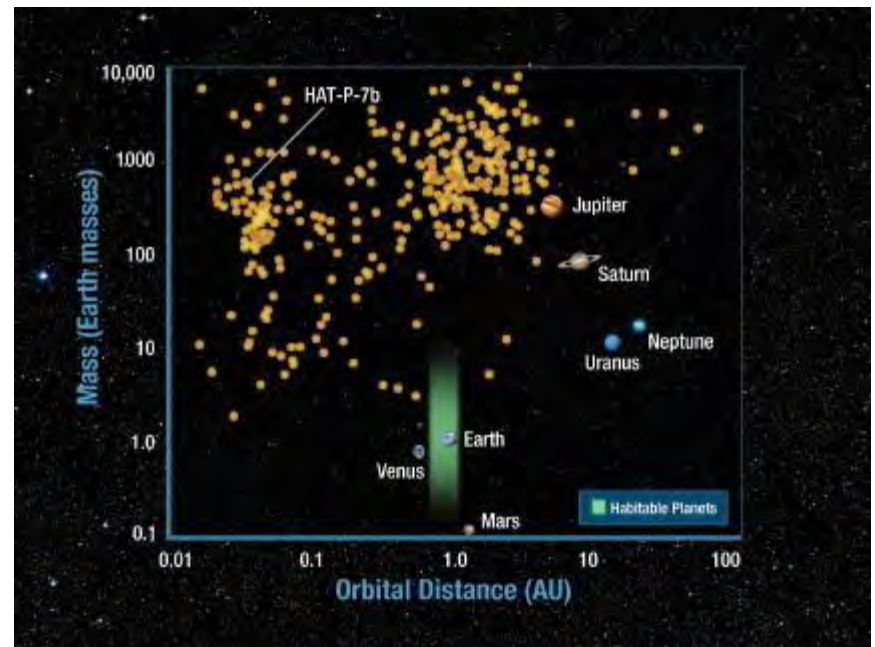
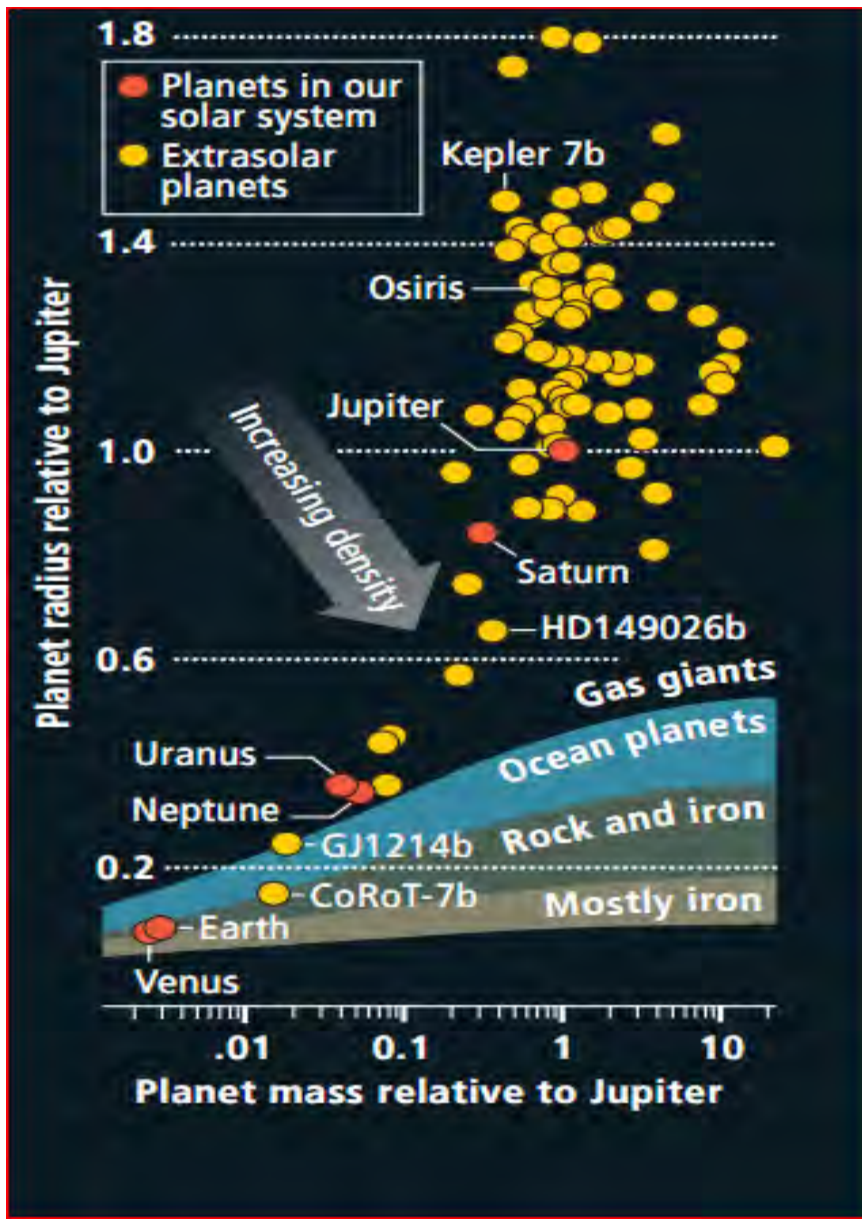
Earth's First Atmosphere (4.5 B)

- Hadean Period; H₂, He, H₂O, CO₂, N₂, NH₃, CH₄, CL, S
- About 100+ Atmospheres like Venus.
- Before Giant Impact Event



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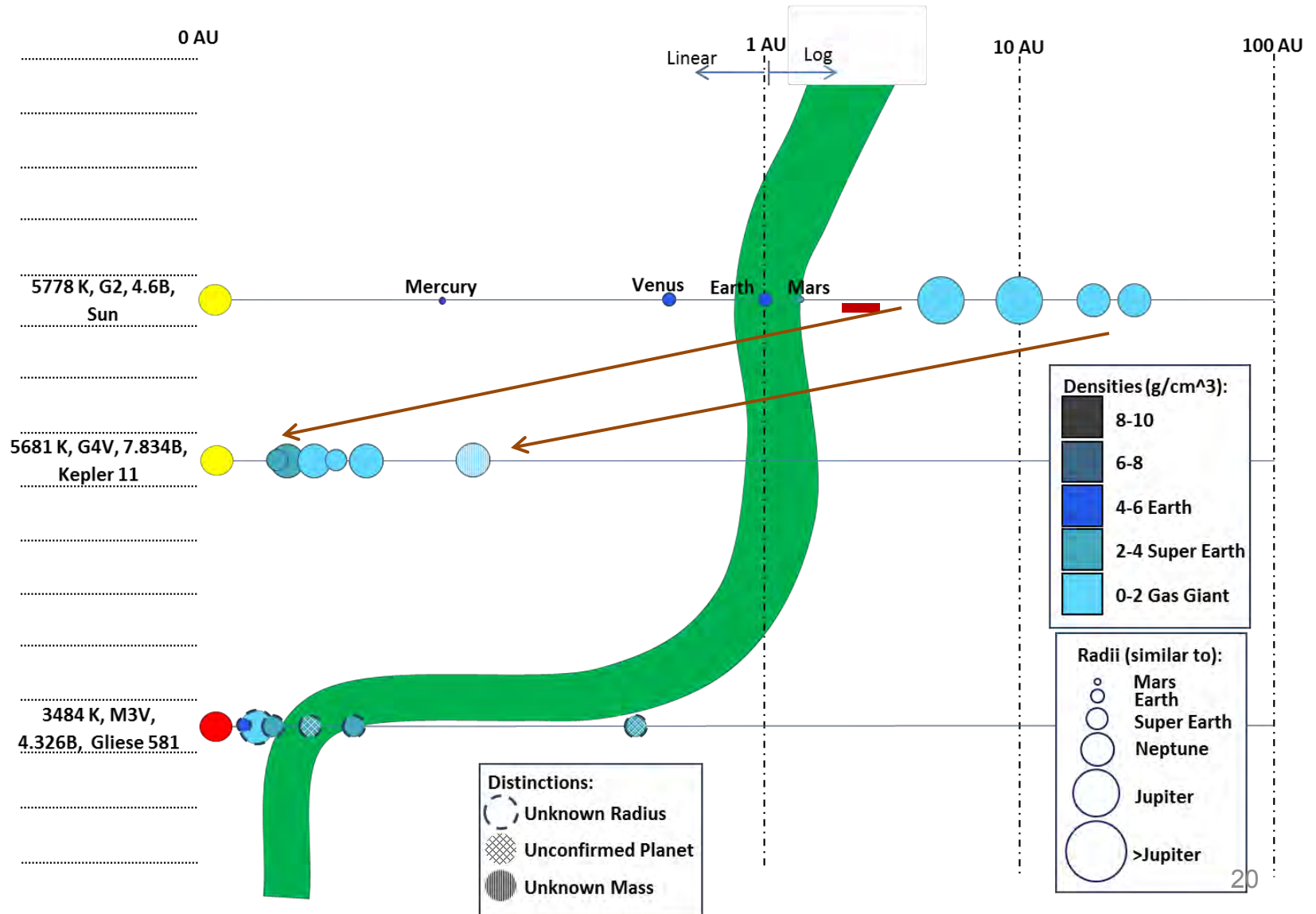
“Day 0”

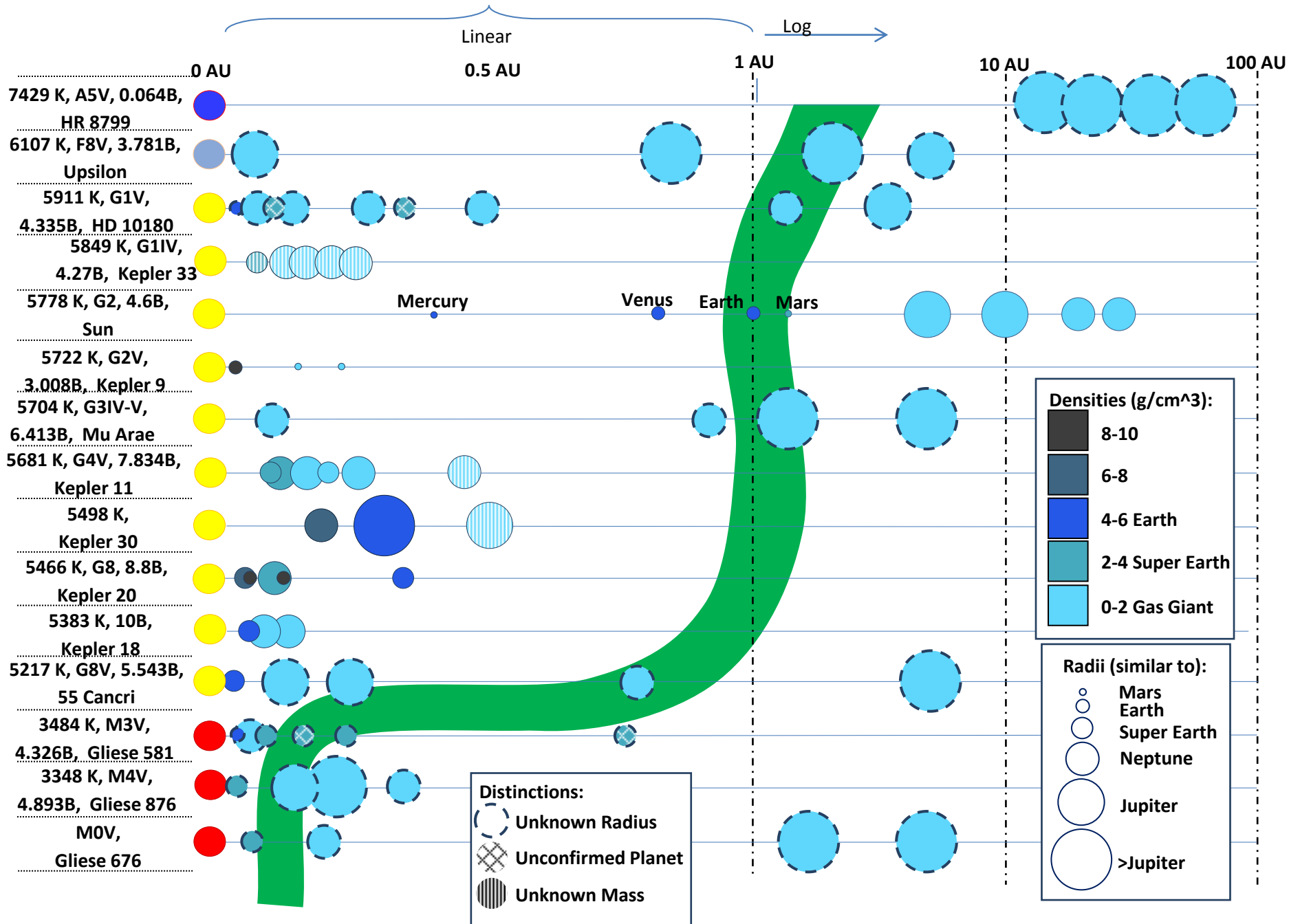


Data Based on NASA Exoplanet Data Base, See Wikipedia

Exo-planetary Systems Compared to our Solar System

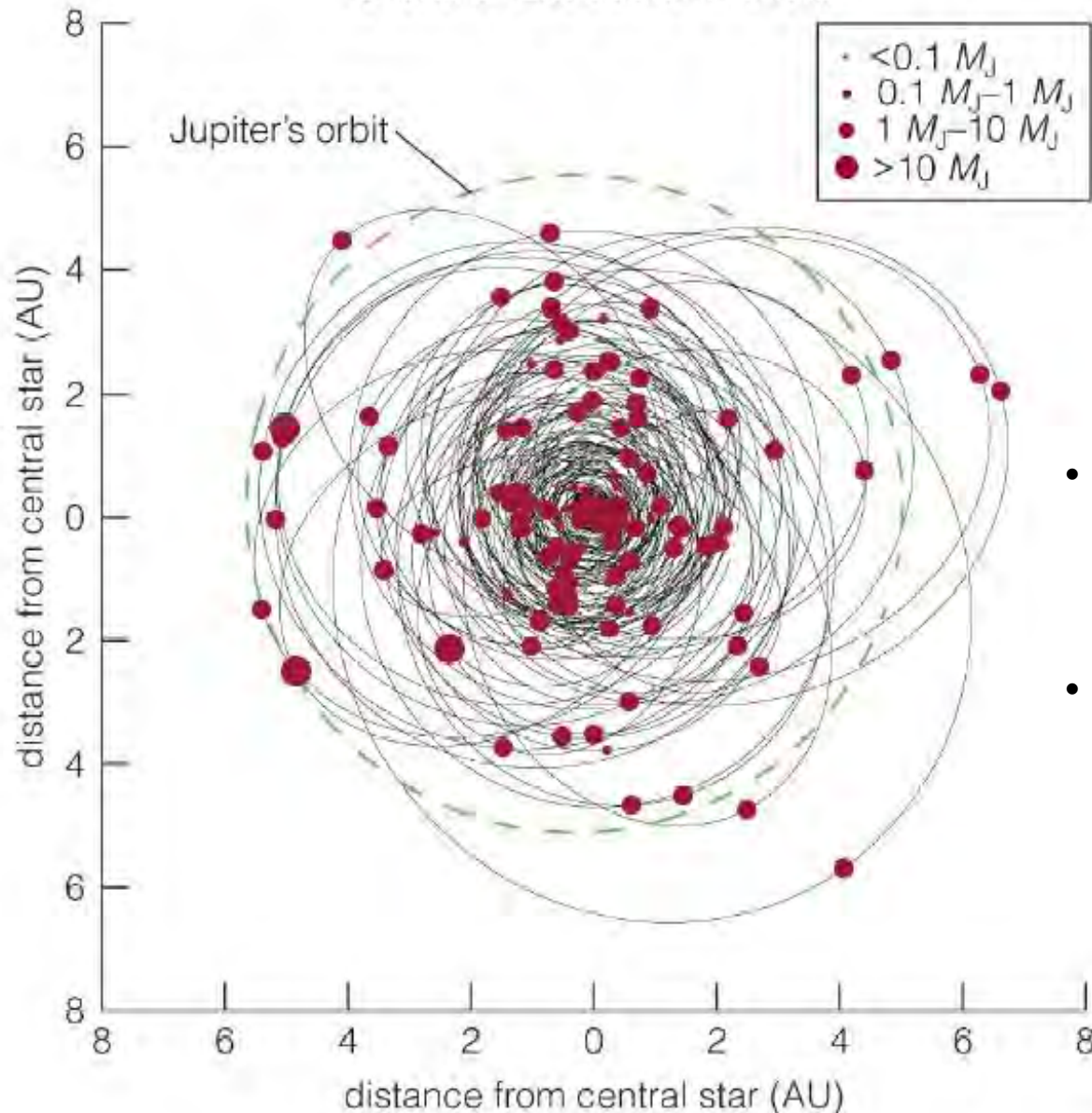
Star Intensity, distance, size, density, description, HZ





Eccentric orbits of Exoplanets

Orbits of Extrasolar Planets



Unlike Solar System

- Orbital Planes often misaligned and titled (inclination variable)
- Some planets in retrograde motion to their star's rotation

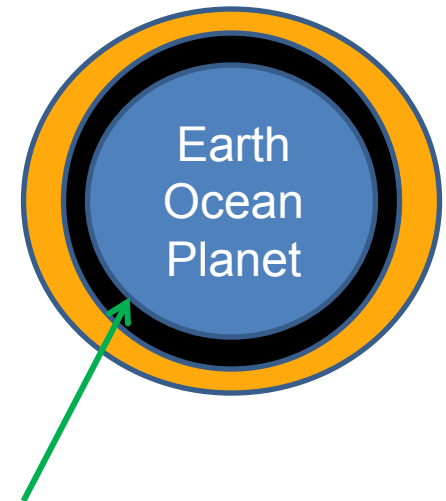
Exo-planet relevance to origins

“Many Not Like Our Solar System”

- Numerous ~50% of sun like stars have planets. Supports the natural formation of planets from nebular debris (unfolding of initial creation and efficient generation of exoplanetary systems)
- Orbital Chaos suggested from many Hot super-earths and Hot gas giant planets located very near their star (<0.4 AU) and show elliptic orbits
- Much time must have passed due to observed tidal locking resonances, major orbit alterations, and thermal time constants
- Scarce Solar Systems like ours with an earth type planet in the Habitable Zone but possible. (e.g. “Ocean” or “Waterworld” earth)
- Based on Rare Earth / Privileged Earth arguments, a “Waterworld” would be expected to be “without form and void with darkness over the waters”.

Scientific Reference Frame for Days

- **Genesis 1:2** *And the earth was without form, and void; and darkness was upon the face of the deep. **And the Spirit of God moved upon the face of the waters.***
- Our Omnibenevolent Creator made a site visit over the surface of our earth to personally bring about the transformation of our earth.
- Of great significance, Gen 1:2 identifies the observing frame for creative days (1-6) as the earth’s surface.
- Phenomenological (appearance, e.g.” sunrise”) perspective for observer viewing and recording the creation events.

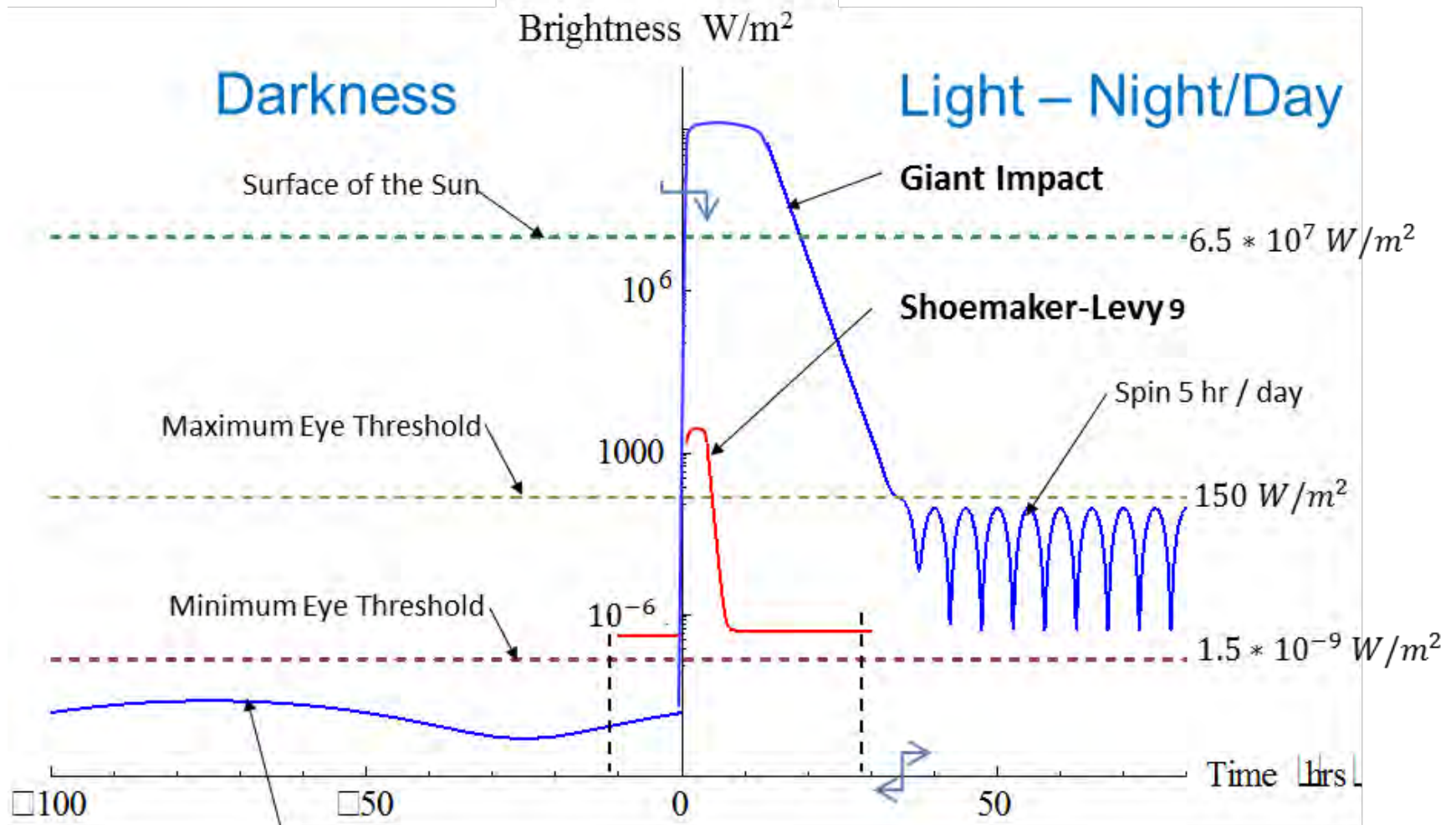


Fiat: Gen. 1:3: “And God Said let there be Light”

... Gen. 1.5: “and Evening and Morning were the first day”

- ***The greatest light show ever on earth!***According to mainstream science the earth’s surface radiation was much brighter than the sun during a 24 hour period and remained bright for many weeks afterward.
- ***Evening First!*** On Day 1 complete blackness (evening) changed to bright light (morning) giving consistency to the strange order of Gen. 1:5.
- ***First Day!*** *In < 1 hr.* earth’s rotation rate went from slow to 5 hrs/day.
- ***“Lesser Light” formed!*** Moon formed with many desirable legacies. Importance of the moon for Life on Earth (Spradley, 2011).
- ***Earth Structure reborn!*** Iron core and mantle growth (suitable for plate tectonics, strong magnetic field), stronger gravity, thick poisonous atmosphere removed,

Day 1 Light : Earth Darkness to Brighter than the Sun (Conceptual)



Pre-Impact Day
No spin – Slow Rate

“Day 1”

Evidence for Giant Impact

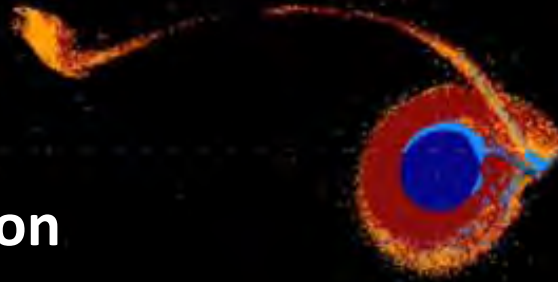
- Miraculous with just the right angle, glancing impact point, energy, mass, composition, timing
- Explains earth's tilt, spin rate, high angular momentum, lunar mass, soil composition, Iron poor, isotopes, ages, low lunar density, low volatiles, and others
- Science: Always open to new data.



Artist's depiction of a collision between two planetary bodies. Such an impact between the Earth and a Mars-sized object likely formed the Moon (Wikipedia image)

Giant impact
 $t = 4.72\text{h}$

mass ratio 9 : 1
total mass $1.05 M_e$
 $L = 1.25 l_{em}$



Giant Impact-Moon

- 10^{31} Joule
- 10^{17} Atom Bombs
- 1 Billion Shoemaker-Levy 9

r_{earth} _____
 $0.1 r_{moon}$ _____

Andreas Reufer
University of Bern

Shoemaker-Levy 9

- 10^{22} Joules
- 10^8 Atom Bombs

Movie





How the Universe Works, DVD, Blair-Oliphant, R. (Writer), & Trevisick, S. (Director). (2010). How the Universe Works [Television Series]. In S. Marsh (Producer). Silver Spring, MD: Discovery Channel,



“Day 1”

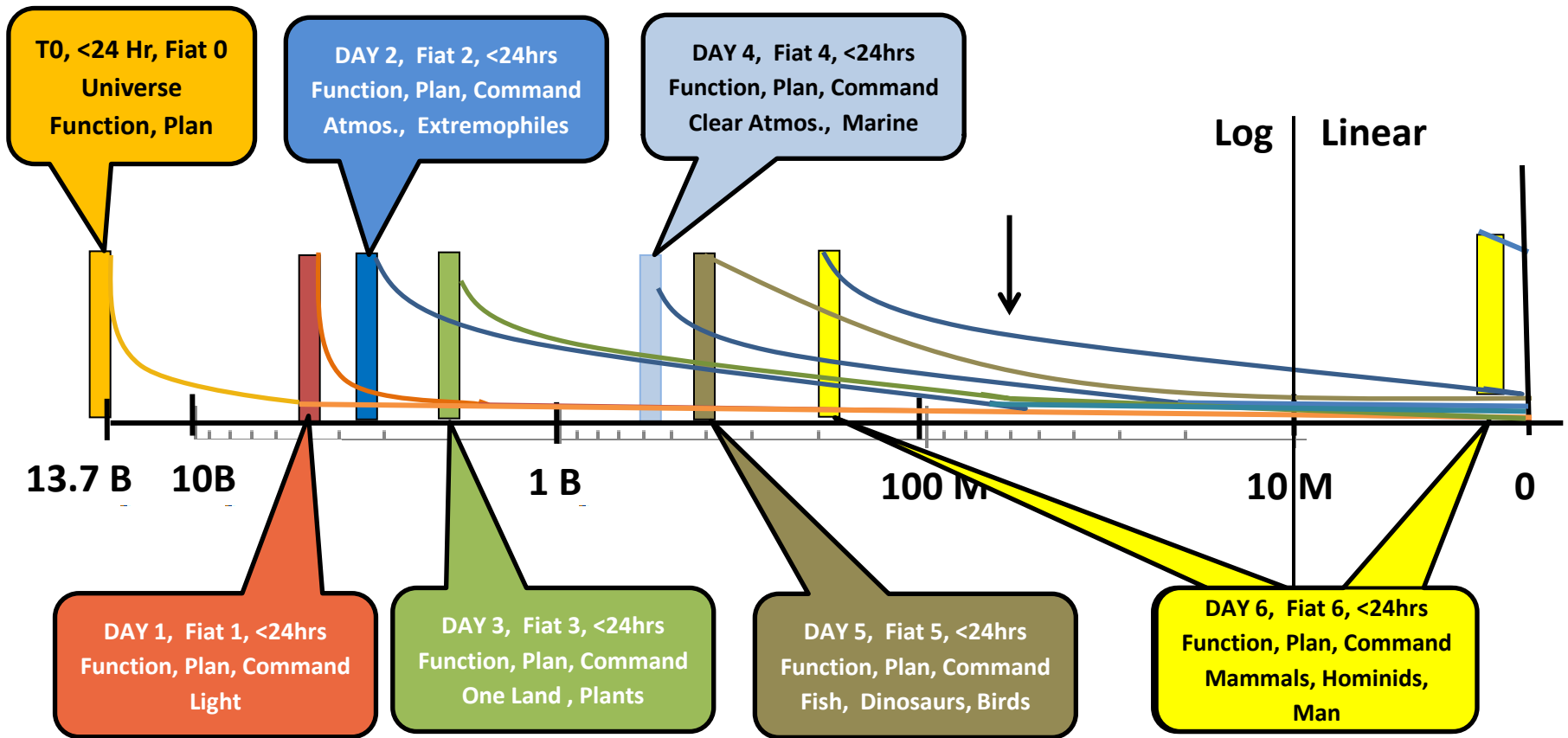
How the Universe Works, DVD, Blair-Oliphant, R. (Writer), & Trevisick, S. (Director). (2010). How the Universe Works [Television Series]. In S. Marsh (Producer). Silver Spring, MD: Discovery Channel,



How the Universe Works, DVD, Blair-Oliphant, R. (Writer), & Trevisick, S. (Director). (2010). How the Universe Works [Television Series]. In S. Marsh (Producer). Silver Spring, MD: Discovery Channel,

“Day 1”

Baseline Creation (BC) Model



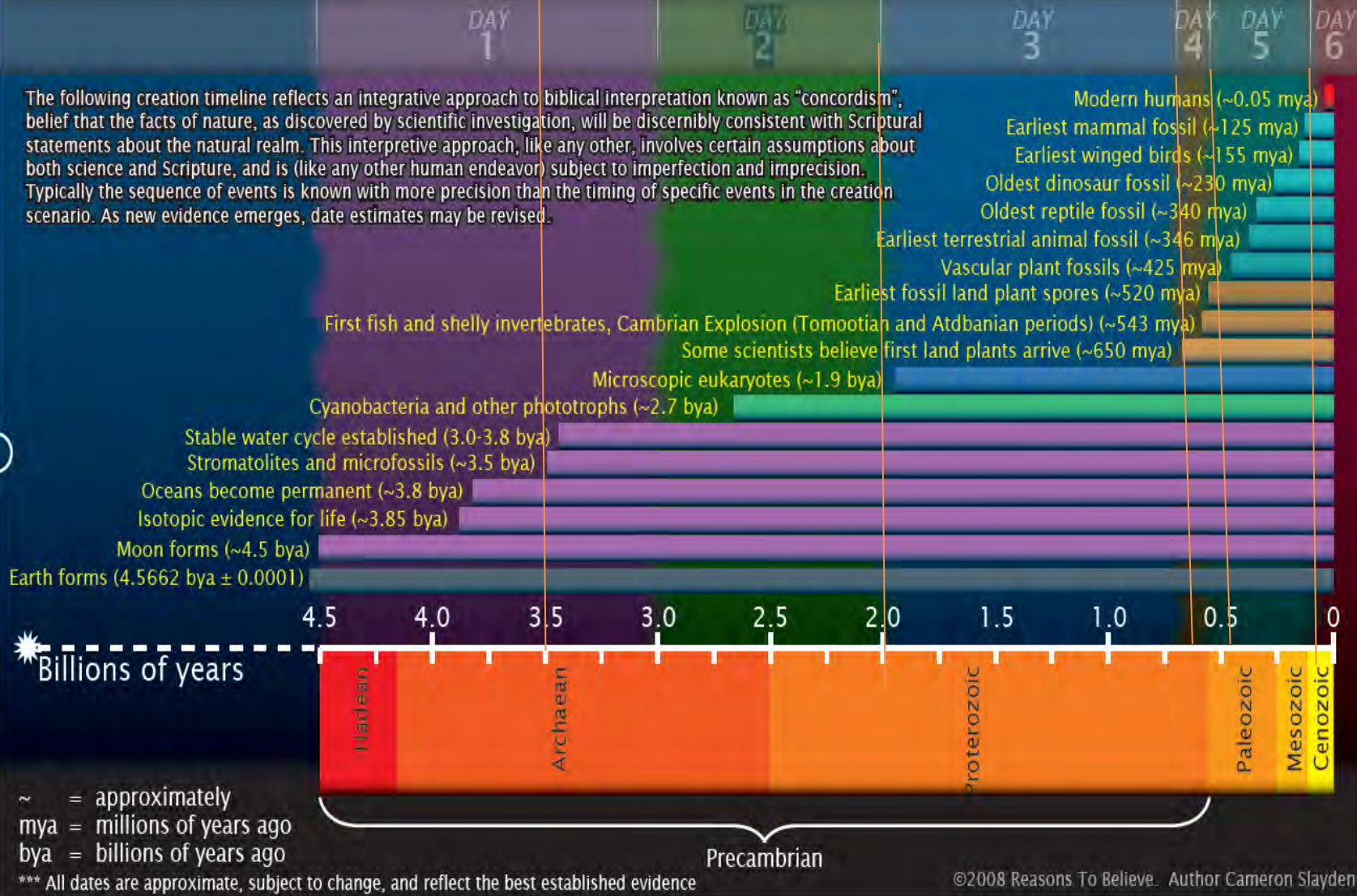
Refinement of RTB Baseline model with Fiats (24hrs Hayward) and Function layer



Genesis 1 Creation Days

Creation singularity (~ 13.7 billion)

The following creation timeline reflects an integrative approach to biblical interpretation known as “concordism”, belief that the facts of nature, as discovered by scientific investigation, will be discernibly consistent with Scriptural statements about the natural realm. This interpretive approach, like any other, involves certain assumptions about both science and Scripture, and is (like any other human endeavor) subject to imperfection and imprecision. Typically the sequence of events is known with more precision than the timing of specific events in the creation scenario. As new evidence emerges, date estimates may be revised.



~ = approximately
 mya = millions of years ago
 bya = billions of years ago

*** All dates are approximate, subject to change, and reflect the best established evidence

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“Days 0-6”

From RTB Website, July 2012

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- Center for Science and Culture: <http://www.discovery.org/csc/>
- Bio-Logos: <http://biologos.org/>

Other Ways of Knowing:

- Purpose and first cause,
- The existence of moral law,
- The existence of personality and servant sacrifice (love, empathy),
- Historical evidence of Biblical statements,
- Personal experience,
- Scripture Prophecy and scientific credibility,
- The weakness of alternative non-Christian models (e.g. Multiverse),
- Aesthetics/beauty

Star of Bethlehem- BC Example

- Evangelical student views: Supernova, Comet/meteor/sky, Supernatural light, North Star, Conjunction of stars/planets, myth/legend, other?
- Bible Star requirements: It signified birth/kingship, connection with Jewish nation, rose in east, appeared at precise times, It endured over many months, it was ahead of the Magi as they went south, it stopped over Bethlehem.
- Adopted by secular world to show in planetariums: Dismiss poor science (Supernova, comet/meteor, North star). Show sky and teach showing a highly improbably event in 2-3 BC (multiple encounters of the King Planet with the King Star with retrograde motion in the constellation Leo the Lion associated with Judah, Gen. 49:9, and other connections).

What was the **star** of Bethlehem?

NEXT ▶

Scholars argue whether the Star of Bethlehem was a legend created after the fact or a miracle created by God especially for the occasion of Christ's birth.

But if it was a real astronomical event, what could it have been?

● LINKS

SOURCE: "The Christmas Star", John Mosley

Clay Frost / MSNBC

See website by Griffith Observatory:

http://askelm.com/video/real/xmas_star.htm

Questions

