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TASC

TASC's mission is to rebuild and strengthen the foundation of the Christian faith by increasing awareness of the scientific evidence supporting the literal Biblical account of creation and refuting evolution.

May 2017

Current Science and Creation

By Dan W Reynolds

This month I report on various science news stories and articles from the secular and creationist literature from over the past few years. The topics will include origin of life research, the discovery of nearby earth-sized planets, the discovery of gravity waves, the competition between dark matter and Modified Newtonian Dynamics (MOND) for explaining astronomical observations, new evidence for a galactocentric universe, the use of DNA for computer memory, a conference on the historicity of Adam, and an upcoming total solar eclipse which will soon be visible near you.

Origin of Life

The origin of life—the transition from chemistry to the first self-replicating life form—has remained an enigma for materialists. There are a world of difficulties. The simplest living thing we are aware of already has fully functional DNA, RNA, proteins, various molecular machines such as ribosomes, enzymes, etc. The DNA/RNA/protein system in extant cells is irreducibly complex. The DNA has the information for building proteins. Proteins convert the information in DNA into an RNA version that is then read by a molecular machine (ribosome) consisting of unique RNA and proteins. The information read from the RNA is translated into a protein. Hence one needs proteins to read DNA, DNA to provide the blueprints for proteins, and RNA to shuttle information around. Remove any piece, and the system does not work.

The gulf between chemistry and the simplest living thing is so vast that most materialists believe "life" must have begun as a self-replicating molecule which over the eons evolved into modern biochemistry. Some form of RNA is currently favored as the first self-replicating molecule. This view of the origin of life is called the RNA World Hypothesis. RNA has the ability to carry information *and* carry out chemical reactions. RNA molecules that can do both are referred to as ribozymes (an RNA molecule acting as an enzyme). So far, no one has ever found or made a self-replicating RNA molecule.

Some of the recent research in this area has focused on plausible reactions that could have generated the building blocks of RNA and finding ribozymes with the capacity to replicate short RNA molecules. One huge question is how could a self-replicating RNA molecule evolve from non-self-replicating molecules.[1] Some recent work showed that a 20% yield of adenosine monophosphate (AMP) could be had from a mixture of urea, ammonium formate, and water (1:2:4) + disodium phosphate + adenosine held at 65°C for 19 days. Similar conditions afforded the other 3 ribonucleotides. These reactions form the base/ribose/phosphate connections in the same flask. This approach is better than previous efforts of preparing the ribose and bases separately then combining them, an approach that has proved difficult. Nevertheless, the proposed new chemistry requires isolation and purification of intermediates and only forms racemic mixtures.

An RNA only system consisting of RNA templates that are copied by an optimized ribozyme has been developed.[2] However, the ribozyme is unable to replicate itself. The ribozyme was a modified version of one found in nature; hence the information needed for functionality was already built-in. The optimization was accomplished by directed evolution—accelerated random mutations followed by artificial selection by highly trained chemists. While the work does show that a ribozyme can be developed that replicates short RNA strands, it does not show how the ribozyme could have arisen in the first place.[3]

Reactions where a chiral product autocatalytically/kinetically favors its own formation are being examined as a solution for the problem of homochirality (e.g., the Soai reaction).[4] Even though most reactions that form chiral molecules form equal amounts of 2 possible enantiomers (mirror image isomers), there is usually a very slight excess of one isomer or the other. Hence the slight excess of one isomer could then, in principle, favor the formation of that isomer. However, which, if any, reactions of this type were operative on the early earth remains unknown.

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[1] Gross M (2016) How life can arise from chemistry, Current Biology 26:R1247–R1271

[2] Horning DP, Joyce GF (2016)Amplification of RNA by an RNA polymerase ribozyme, Proc Natl Acad Sci U S A, 113(35):9786–9791

[3] Tomkins JP (2016 Sep 06) Life from an 'RNA World'?, <http://www.icr.org/article/9538> Accessed 2017 Apr 26

[4] Soai reaction, <en.wikipedia.org/wiki/Soai_reaction> Accessed 2017 Apr 26

Presumed microfossil evidence for life at 4.3 Ga[5] (Sm/Nd)[6] that allegedly flourished around hydrothermal vents has been reported.[7] Iron minerals (hematite) associated with putrefaction were found along with high C12 isotope content (graphite) typically associated with life. Not everyone is convinced, however, of the biological interpretation. In the secular geological and biological paradigm, this would mean life started almost immediately after formation of the oceans. And the origin of our oceans has been a mystery. The deuterium/hydrogen (D/H) ratios of meteorites[8] and comets[9] are different from the oceans, leading some to suggest the oceans came from water inside the earth.[10] As Frank Sherwin of the Institute for Creation Research (ICR) observes, " Although evolutionists cannot define life, how it arose, or where this miraculously first-life event occurred, they maintain it somehow did so almost instantaneously! Truly, a key ingredient in this strange, secular scenario is blind faith."[11] For examples, consider the rosy assessment of the current state of abiogenesis research by science writer Michael Gross:

> Recently, however, progress in understanding and recreating elements of the RNA world, believed to have been an evolutionary phase preceding and enabling the emergence of DNA and proteins, has advanced to a point where an understanding of how life might arise—on our planet or on one of the many others that are now being discovered—comes within our grasp.[12]

Monomer synthesis has not been fully worked out. And even if all the monomers were made in large quantities and high purity in the same locality with all the conditions necessary for polymerization, how the monomers could be arranged into functional ribozymes is unknown. This is the information problem, and it is the most difficult.[13,14] Intelligence is the only known agency that can generate the information found in living things.

In Susan Mazur's recent book *The Origin of Life Circus* (2014),[15] leading origin of life researchers describe the utter disaster of the RNA world scenario in one-on-one interviews she recorded in person. They acknowledge the information problem, the tendency for RNA to hydrolyze, the difficulties of monomer synthesis, and more.[16]

Nevertheless, funding for abiogenesis research has been fueled by the hope of finding life on exoplanets,[17] which leads us to our next topic.

Nearby Earth-Sized Planets[18,19,20]

The discovery of 7 earth-sized planets, 3 of which are in the habitable zone (could have liquid water) of a red dwarf star, TRAPPIST-1, in the constellation Aquarius 40 light years away, has been recently announced. Astronomers hope to determine the composition of the atmospheres to determine if life as we know it could be there (oxygen, methane). All the planets are tidally locked, keeping the same sides facing their star. Masses vary from 0.5 to 1.5 × that of earth. The diameters are in the range of 75.5 to 112.7% that of earth; hence their densities (60 to 117% of earth) suggest the first six planets may be terrestrial/rocky worlds like earth. The orbital periods vary

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[5] Ga: billion years ago
[6] Sm/Nd: samarium-neodymium dating method
[7] Dvorsky G (2017 Mar 01) Scientists claim to have found our planet's oldest fossils, <http://newscdn.newsrep.net/h5/nrshare.html?r=3&lan=en_US&pid=14&id=ND99063f5NK_us&app_lan&mcc=310&declared_lan=en_US&pubaccount=ocms_0%E2%80%A6%00%00> Accessed 2017 Apr 26
[8] Holmes B (2015 Nov 12) Origin of Earth's water traced back to the birth of our planet, <https://www.newscientist.com/article/dn28485-origin-of-earths-water-traced-back-to-the-birth-of-our-planet/> Accessed 2017 Apr 26
[9] Byrd D (2014 Dec 11) Rosetta's comet fuels debate on origin of Earth's oceans, <http://earthsky.org/space/rosettas-comet-fuels-debate-on-origin-of-earths-oceans> Accessed 2017 Apr 26
[10] Coppedge DF (2017 Mar 20) Water theories evaporate, <http://crev.info/2017/03/water-theories-evaporate/> Accessed 2017 Apr 26
[11] Sherwin F (2017 Mar 20) 'Oldest evidence' of life? <http://www.icr.org/article/9946> Accessed 2017 Apr 26
[12] Gross M (2016 Dec 19) How life can arise from chemistry, Current Biology 26:R1247–R1271.
[13] Reynolds DW (2006 May) Intelligent design, <http://tasc-creatioscience.org/sites/default/files/newsletter_pdf/may06.pdf> Accessed 2017 Apr 26
[14] Reynolds DW (2013 May) The origin of information in biology, <http://tasc-creationscience.org/sites/default/files/newsletter_pdf/may2013.pdf> Accessed 2017 Apr 26
[15] Mazur, Susan The Origin of Life Circus (Susan Mazur, 2014)
[16] Evolution News (2017 Feb 24) Putting the RNA world theory to the test with "Pistol", <http://www.evolutionnews.org/2017/02/putting_the_rna103513.html> Accessed 2017 Apr 26
[17] Pressman A, Blanco C, Chen IA (2015) Review: The RNA World as a Model System to Study the Origin of Life, Current Biology 25:R953–R963
[18] Yeager A (2017 Feb 22) Seven Earth sized planets orbit nearby supercool star, <https://www.sciencenews.org/article/seven-earth-sized-planets-orbit-nearby-supercool-star> Accessed 2017 Apr 26
[19] Verger R (2017 Feb 23) Keys to life? Scientists explain how newly discovered exoplanets could be habitable, <http://www.foxnews.com/science/2017/02/23/keys-to-life-scientists-explain-how-newly-discovered-exoplanets-could-be-habitable.html> Accessed 2017 Apr 26
[20] Faulkner D (2017 Feb 25) Discovery of 7 Earth-sized planets orbiting star TRAPPIST-1: Evidence of extraterrestrial life or recent origin? <https://answersingenesis.org/astronomy/extrasolar-planets/7-earth-sized-planets-trappist-1/> Accessed 2017 Apr 26

from 1.5 to 20 days and are in resonance,[21] but the shapes of their orbits are still unknown. All 7 planets are closer to their star than Mercury is to our sun. Planets 4 to 6 (e to g) are in the habitable zone. Modeling based on what we do know about this planetary system suggests it could not last longer than 1 billion years. Could the system be young?

Even if water is eventually found on these planets, it would not prove life evolved there. And oxygen could form from photolysis of water vapor in the atmosphere,[22] which is all the more likely given the typical high ultraviolet light output of red dwarfs. Nonbiogenic yet natural sources for methane are also known,[23] so the detection of oxygen and/or methane would be equivocal on the question of life. However, the lack of the presence of water, methane, and oxygen would potentially rule out life as we know it. The fact that solar flares from red dwarfs are typically large, combined with the close proximity of these planets, suggest conditions hostile to life. And we still don't know if TRAPPIST-1 is a variable star, another potential problem. Given these difficulties and unknowns combined with the fact that no one has any idea how life could have emerged on the earth, it is a bit premature to assume life is abundant and widespread in the universe.

Gravity Waves

One of the predictions of Einstein's Theory of Relativity was the existence of gravity waves. These would be waves in space-time analogous to ripples in a pond. The implication was that "empty" space has properties, such as spaspatial dimensions, that can be altered by moving masses. However, the predicted effects by even rapidly moving (considerable fraction of the speed of light) enormous masses (many solar masses) were too small (tiny fraction of the size of a proton) to be measurable. However, a pair of detectors sensitive enough to measure gravity waves, called the Laser Interferometer Gravitational Wave Observatories (LIGO), were built in the last decade. Then on September 14, 2015, LIGO detected gravity waves for the first time.[24,25,26] The observed waveform fit theory perfectly for a binary black hole star system consisting of stars with 36 and 29 solar masses where the 2 stars merged into one about 1.3 billion light years from earth. The orbital speeds of the stars as they approached one another would have accelerated until they finally merged. The pattern of motion of the merging stars would have a predictable effect on dimensions of space-time, assuming gravity waves. The predicted effect is what was observed on earth by LIGO. On December 25, 2015, a second detection of gravity waves was made, again a black hole binary merger.[27] These results are yet another confirmation of relativity and evidence for black holes and black hole binary star systems. The discovery was welcomed by creationist physicists and astronomers including Humphreys,[28] Hartnett,[29] Faulkner,[30] and Cupps.[31] The cosmologies of Humphreys and Hartnett are based on relativity.

Hartnett has written[29] that the discovery of gravity waves is evidence that the speed of light (c) has been the same since the black hole merger and our detection of it. This is due to the fact that the shape of the waveform produced by the merger is dependent on the value of the speed of light. If the speed of light had been greater at the time of the merger, the waveform we detected would not have been the same as predicted. As would be expected, those holding to a greater speed of light in the past (cDK theory) disagree with this conclusion.[32,33] Much of the disagreement is centered around the validity of the discovery of gravity waves. Future research will tell if gravity waves

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[21] Orbital resonance means that the orbital periods occur in specific ratios reflecting the gravitational interaction between the planets.

[22] Wells J (2000) *Icons of Evolution*: *Science or Myth? Why Much of What We Teach About Evolution Is Wrong*, Regnery, Washington, DC, 14-19

[23] Tenenbaum D (2005 Jul 25) Methane on Earth, <http://www.astrobio.net/mars/methane-on-earth/> Accessed 2017 Apr 26

[24] Video primers for gravity waves can be found on YouTube.com. Brian Greene Explains The Discovery Of Gravitational Waves, <https://www.youtube.com/watch?v=f0RGjPjrniU> Accessed 2017 Apr 26

[25] Discover Magazine, A wrinkle in space-time confirms Einstein's gravitation. <http://discovermagazine.com/bonus/gravity> Accessed 2017 Apr 26

[26] Discover Magazine, *A Century of Gravitational Waves*, a free e-booklet from Astronomy Magazine and Discover Magazine. <http://discovermagazine.com/~/media/Files/PDF/Bonus%20Materials/DIG-ASY-PRM_GravWavesFIN.pdf?force=1> Accessed 2017 Apr 26

[27] Hartnett JG (2016 Jun 17) A second gravitational wave has been detected by LIGO. <https://biblescienceforum.com/2016/06/17/a-second-gravitational-wave-has-been-detected-by-ligo/> Accessed 2017 Apr 26

[28] Humphreys DR (2016) Gravity wave observations are powerful evidence for relativity and black holes, Creation Matters, 21(3):1 <https://creationresearch.org/index.php/extensions/s5-creation-matters/cm-archive?task=document.viewdoc&id=977> Accessed 2017 Apr 26

[29] Hartnett JG What impact does the detection of gravitational waves have on biblical creation? <http://creation.com/detection-of-gravitational-waves-and-biblical-creation> Accessed 2017 Apr 26

[30] Faulkner D (2016 Feb 17) What eoes the eetection of gravity waves mean for thecreation model? <https://answersingenesis.org/physics/gravity/detection-of-gravity-waves/> Accessed 2017 Apr 26

[31] Cupps VR (2017) Gravitational waves and the space-time continuum. Acts & Facts 46(2) <http://www.icr.org/article/gravitational-waves-space-time-continuum/> Accessed 2017 Apr 26

[32] Hartnett J (2016 Mar 1) Impact of gravitational wave detection: A response to Setterfield's response. <http://creation.com/response-to-setterfield-on-impact-of-gravitational-wave-detection-fault > Accessed 2017 Apr 26

[33] Setterfield B (2016 Feb 12) Gravitational wave announcement, <http://www.setterfield.org/Gravitational_Wave.html> Accessed 2016 Apr 26

have been detected and/or the speed of light has been greater in the past.

Dark Matter and MOND

Among the unanswered questions in astrophysics is explaining behavior that appears to deviate from Newtonian physics. Astronomers are able to determine the mass and velocities of stars and galaxies from the light they emit. The outer bands of spiral galaxies move faster than predicted based on the observed (visible) mass and the assumption of Newtonian gravity. Two major schools of thought[34] have emerged to explain this. One school says there is another form of matter that is there and behaves in a Newtonian way insofar as gravity is concerned but which we otherwise can't detect. This matter has been termed "dark matter" since we can't directly observe it. The second school of thought believes Newtonian gravity may not apply at great distances and hence there is a need to modify our understanding of gravity. This school has been termed MOND which is short for MOdified Newtonian Dynamics. Other problems that are impacted by this debate include the formation of stars and galaxies, the behavior of galaxy clusters, the distribution of elements in the universe, the nature of the cosmic background radiation, the magnitude of gravitational lensing, and the geometry of space-time. There are creationist and secular scientists in both camps.

Research on dark matter has included looking for new subatomic particles and primordial black holes. There has been little success. If dark matter exists, it would be non-baryonic, it would represent 23% of the mass-energy of the universe, it does not interact with electromagnetic waves like baryonic matter, but would behave like ordinary matter insofar as gravity is concerned. Experiments using the Large Hadron Collider (LHC) in Europe have failed to produce new particles that could account for dark matter. Two prevailing theories about what dark matter is are WIMPS (Weakly Interacting Massive Particles) and MACHOS (Massive Compact Halo Objects). WIMPS are predicted by a theory called supersymmetry. So far, WIMPS have not been detected at the LHC or in large underground detectors filled with liquid xenon. MACHOS would be star sized objects (e.g., brown dwarf stars made of baryonic matter) around the central bulge of our galaxy that have gone undetected. Some objects fitting the description have been found in the galactic halo, but the mass was too small. Primordial black holes have not been detected either.[35] While there is little in the way of direct evidence for dark matter, at least one major creationist thinks the idea has merit.[36]

The Bullet Nebula is one the best evidences for dark matter. The nebula is actually 2 colliding galaxy clusters. The clusters have huge gas clouds associated with them. During the collision, the gas clouds are slowed down due to their large cross section while the stars, having an overall smaller cross section, pass by one another with relative ease. The result is a high concentration of x-rays near the center of the collision due to the heated gas clouds and a high concentration of visible light due to stars out at the edges. The gravitational lensing of distant galaxies by the Bullet Nebula is associated with the edges of the nebula even though the majority of baryonic matter is to be found in the colliding gas clouds. Dark matter is apparently better able to account for the observations than MOND.

MOND holds that gravity may vary by $1/r$ at large distances instead of $1/r^2$ as in Newtonian gravity. MOND's modifications would apply when the acceleration due to gravity is very small. So far, MOND has accurately predicted the rotation curves (velocity of stars in a spiral galaxy as a function of distance from the center) of hundreds of spiral galaxies.[37] MOND is assumed in the cosmology of young-earth cosmologist John Hartnett.[38] Recent research at Case Western has shown that "the acceleration observed in rotation curves [of spiral galaxies] tightly correlates with the gravitational acceleration expected from the visible mass only".[39] The findings were consistent with spiral and irregular galaxies, large and small, with and without large central bulges, and galaxies consisting of mainly stars or mainly gas. The results suggest that if dark matter exists, it must be tightly associated with baryonic matter. In other words, the rotation curves of the galaxies could be predicted based on the location of the baryonic matter alone. There is no reason for this in the standard model, and it seems a strange coincidence. MOND, however, is supported by the results.

So, dark matter or MOND, which is true? Time will tell.

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[34] There is a another school of thought, a minority view among creationists and secular cosmologists, called plasma cosmology which offers alternative explanations. See Know plasma, know 99.999% of the universe, www.plasma-universe.com and en.wikipedia.org/wiki/Plasma_cosmology

[35] Gough E (2017 Apr 4) Towards a new understanding of dark matter, http://www.universetoday.com/134131/towards-new-understanding-dark-matter/> Accessed 2016 Apr 26

[36] Faulkner DR (2017) The case for dark matter, Answers Research Journal 10:89–101, <https://answersingenesis.org/astronomy/cosmology/case-for-dark-matter/> Accessed 2017 Apr 26

[37] Carmeli O (2017 Feb) The physicist who denies that dark matter exists. <http://cosmos.nautil.us/short/144/the%ADphysicist%ADwho%ADdenies%ADthat%ADdark%ADmatter%ADexists2/13> Accessed 2017 Apr 26

[38] Hartnett J (2007) *Starlight, Time, and the New Physics*. Creation Ministries International, 179.

[39] Phys.Org (2016 Sep 21) Acceleration relation found among spiral and irregular galaxies challenges current understanding of dark matter, <https://phys.org/news/2016-09-spiral-irregular-galaxies-current-dark.html> Accessed 2017 Apr 26

DNA as Computer Memory[40]

Scientists recently combined and compressed 6 digital files: a full computer operating system, an 1895 French film, *Arrival of a Train at La Ciotat*, a $50 Amazon gift card, a computer virus, a Pioneer plaque, and a 1948 study by information theorist Claude Shannon. The ones and zeros of the resulting file were mapped into the 4 nucleotides in DNA strands. The resulting DNA was then read and the resulting sequences were translated back into binary code. The original files were recovered with *zero* errors. The DNA version could be copied (into DNA strands) error free. The total cost was about 10K USD. The exercise demonstrated that 1 g of DNA could contain 232 petabytes (1 million gigabytes; 232K terabyte hard drives) of information. The experimenters stated: "We believe this is the highest density data storage device ever created." Indeed.

Evolution, Genetics, and the Historical Adam Conference

On April 8, Southeastern Baptist Theological Seminary hosted a 5-hour conference with 2 invited speakers: Dr. Nathaniel Jeanson of Answers in Genesis and Dr. Dennis Venema of Biologos. Each speaker gave 2 presentations followed by a final question-and-answer session. There were 130 attendees plus 10,000 watching the live-stream on Facebook. I'll review what each speaker said and then offer a few brief comments.

Jeanson's talks were first and last of the 4 presentations. He opened his first talk with a question: Who do you trust? He said that unless a person is expert in a field, what they believe will usually come down to who they trust to tell them the truth. Evolutionists claim that all competent scientists believe in evolution except for the few that have a prior religious commitment. Biologos, dominated by evolutionary thinkers, has written that Jeanson dishonestly handles genetic data to fit the Adam/Eve/YEC[41] paradigm. Biologos says the scriptures are "inspired" but are not comfortable with inerrancy.

The genetic data needed to decide between evolutionary and creationary theories is only now becoming available. A hypothesis that has repeatably not been rejected by the data is considered a scientific theory. Darwin's decent with modification mechanism for macroevolution has been not rejected by the data for 150 years. The theory is consistent with the nested hierarchical patterns seen in morphology and the limited genetic data.

What would we expect to see in a created world of living things? Since we are made in God's image, looking at how we make things may give us a clue as to how God would make things. Humans make things that exhibit a nested hierarchy. Automobiles are a good example. There is a basic design all cars have: an engine, four wheels, a steering wheel, a radiator, etc. Then there are various features that cars may or may not have: air conditioning, disc brakes, satellite radio, a rear camera, a sunroof, etc. Cars with all the variations can be arranged in nested hierarchical patterns. Does this mean that descent with modification/common ancestry is the correct explanation for the origin of cars? Clearly not. The same thinking can be applied to the biological world. Hence the theory of special creation, the idea that God created various kinds separately with no evolutionary relationships, has not been disproved by the morphological or genetic data and is also a viable theory. This thinking addresses homology. Humans create things with shared structures so "homology" fails to reject design. Even organisms that appear intermediate in form between other groups of organisms are consistent with special creation. For example, humans make land vehicles, seafaring vehicles, and amphibious vehicles. Hence the existence of "intermediate forms" fails to reject evolution or design.

Vestigial organs and molecular scars are used as evidence for evolution. However, evidence has been mounting that these alleged left over remnants of evolution are functional after all. And if functional, then design is implied.

How much DNA is functional? It is an open question. The trajectory of discovery is towards a fully functional genome. The lack of evidence for function for some DNA does not disprove design: absence of evidence is not evidence of absence. Most of our DNA has not been rigorously tested for function. The results of the ENCODE project point to high levels of function. Even "pseudogenes" are known that have function, a fact consistent with design. Bottom line: the data of science fails to reject the theory of special creation and intelligent design.

Dr. Venema gave the next 2 talks. He considers himself an evolutionary creationist. He is a believer in Jesus. Science is a good place for believers. There are 2 revelations from God: special revelation (Bible) and general revelation (nature). There can't be any conflict between these revelations. However, we should expect conflicts in interpretations due to human nature. Science emerged from Christianity.

A theory in science is different from the colloquial meaning of the term. A scientific theory has been thoroughly tested. The theory of evolution is supported by much evidence that future data could disprove.

Common ancestry is suggested by the data. Populations separate. DNA changes through mutations and recombinations making ancestry traceable. Changes in DNA over time are analogous to changes in human languages over time. Although differences in a language over a few generations are almost imperceptible, eventually new languages emerge with traces of the old languages still

[40] Science Daily (2017 Mar 2) Computer operating system and short movie stored on DNA New coding strategy maximizes data storage capacity of DNA molecules, Science Daily, <https://www.sciencedaily.com/releases/2017/03/170302143947.htm> Accessed 2017 Apr 26

[41] YEC: young earth creation

present. Species and languages are information systems that change in a series of steps.

Whale evolution is well established by the data. He said that ontogeny recapitulates phylogeny. There is evidence that whales descended from a 4-legged land mammal. There is ontological evidence that nostrils became the blowhole and 4 limbs became 2. He said that some whales have no olfactory organ but the genes for it are still there (vestigial). Why would these whales have an olfactory pseudogene if it were not for common ancestry? DNA sequences and development patterns are consistent with descent from a land mammal.

Do humans share common ancestors with other animals? There is support for this from comparisons of DNA sequences and morphologies. We are similar to the apes morphologically and genetically. The DNA of chimps and humans are 95% identical. Both have the same genes in the same spatial arrangement. We share pseudogenes with other primates—best explained by common ancestry. We share the same mutations as other species consistent with descent with modification. There is genetic evidence that egg-laying animals were the ancestors of placental and marsupial mammals (see rebuttal).[42]

Can evolution produce new information? Yes. Chimps have genes similar to humans but are not yet functional.

The current creation/evolution debate in the church is similar to the heliocentrism/geocentrism debate a few hundred years ago. Then, suggestions that the earth was not at the center of the universe or that the orbits of the planets could be anything but perfectly circular were considered theologically untenable. One scholar at that time asked what could possibly be keeping the sun burning without running out of fuel. He said that the only possible answer was that God continually and miraculously created the needed fuel. Hence the sun's continued shining was only explicable by divine intervention. Now we know the sun is powered by nuclear fusion and divine assistance is not required. Hence the scholar had used a "God of the gaps" argument which turned out to be untrue. By analogy, Venema implied the church today will eventually see that evolution explains the origin of species and humans, not special creation. We find God in what we know, not in what we don't know. Evolution is designed.

In Venema's second talk, he continued the comparison of the heliocentrism/geocentrism debate with the current creation/evolution debate. Venema said God was speaking phenomenologically in scripture about the creation of species. He said that stellar parallax is evidence that the sun, not the earth, is the center of the solar system.

We are the product of an evolutionary process. We evolved as a population and not from an original pair. Languages don't start with 2 people and species don't start with a pair of individuals. In evolution, the average characteristics of the species are shifting over time. The population from which humans evolved was never smaller than 10,000 individuals. The amount of diversity in the human genome requires this population size. Another line of evidence of the human ancestral population size comes from incomplete lineage sorting between chimps, gorillas, and humans.

We must take both revelations, special (Bible) and general (nature), seriously. Both come from God. We must remain humble and remember we are fallible. Science can cause us to re-evaluate our understanding of scripture. Visit biologos.org.

Jeanson then gave his second talk and the last of the conference. Are humans related to other species? We don't have the data. What parts of the DNA are functional? DNA is like a twisted ladder. It is like a language.

The age of the earth and human ancestry are becoming intertwined because we are learning about mutation rates and diversity within genomes of populations.

How many differences are there in the DNA between humans and other primates? Between extant humans? There are about 17,000 bases in mitochondrial DNA (mtDNA), Two pairs of 3 billion bases in nuclear DNA. The mtDNA mutation rate is about 1 for every 5 to 8 generations. The mtDNA is passed through the maternal line only. The measured mitochondrial mutation rate is too fast for humans to have shared a common ancestor with apes 6 to 13 million years ago. Other evolutionary divergence times are also problematic. The range of differences seen in human mtDNA today and the known mutation rate fit a human population 6000 years old. There are more differences in the mtDNA in African populations. They may have shorter generational times and faster mutation rates for reasons yet unknown. A map of the history of changes in mtDNA show 3 major nodes closely spaced together. This means that all extant humans can be traced back to 3 women, consistent with Noah and family. The YEC model can make quantitative predictions about diversity of mtDNA for a given population.

The actual nuclear DNA differences between humans and chimps is twice that predicted by known mutation rates and the alleged evolutionary split 6 million years ago. To correct this, evolutionist have suggested the divergence time is actually about 13 to 14 Ma. YEC explanation: Adam and Eve had diversity built-in, not from mutations. If there was rapid exponential population growth after creation, the Flood, and Babel, the YEC model for human origins can predict the genetic diversity seen in the extant human population.

Which model, YEC or evolution, is correct will depend upon the level of function found in the DNA—something we know little about at present.

[42] Tompkins JP (2016) Evolutionists Lay an Egg: Vitellogenin Pseudogene Debunked. Acts & Facts 45:1, <http://www.icr.org/article/evolutionists-lay-egg-vitellogenin> Accessed 2017 Apr 26

Jeanson mentioned his upcoming book *Replacing Darwin*, a scientific look at the origin of species and humans, due out in October. There is also another book, just out, entitled *Searching for Adam: Genesis and the Truth About Man's Origin*, edited by Terry Mortenson. It is a collection of 16 essays written by as many authors, all YEC.

The entire conference including the question-and-answer session will be available in video format free of cost on the seminary website at http://multimedia.sebts.edu under the Conferences drop-down menu. The name of the conference was Evolution, Genetics, and the Historical Adam.

Commentary: I am biased but still think Jeanson was more convincing. The mtDNA evidence is compelling. And he did not really get into the fact that not all human chromosomes have crossed over, the fact that there are only 2 alleles for most traits, the enormous differences between human and chimp Y-chromosomes, that there is one Y-chromosome in extant human males, and the discredited theory that human chromosome 2 resulted from the fusion of 2 chromosomes of some primate ancestor.[43] Jeanson showed that the YEC model for human origins can make qualitative and quantitative predictions, some of which have already been confirmed.

Quantized Galactic Redshifts[44]

Creationist astronomer Jason Lisle has found a new way to process data for the Sloan Digital Sky Survey that does show, albeit weakly, that there are favored redshifts and hence evidence for a galactocentric universe. This distribution of matter in space is consistent with gravity time-dilation solutions to the starlight-time problem and other theories.[45]

Total Solar Eclipse Visible in United States This Summer[46,47]

On August 21 of this year there will be a total solar eclipse visible across the United States from Oregon to South Carolina and several states in between (Idaho, Wyoming, Nebraska, Missouri, Kentucky, Tennessee, Georgia, and North Carolina). The people I know that have seen one agree there is nothing else like it. Make plans now to see it. Our next opportunity will be on April 8, 2024.

[43] Reynolds DW (2015 Apr) On the origin of humans, <http://tasc-creationscience.org/article/origin-humans> Accessed 2017 Apr 26

[44] Lisle J (2016 Mar 30) New method to assess the luminosity function of galaxies. Answers Research Journal 9:67-79, <https://answersingenesis.org/astronomy/cosmology/new-method-assess-luminosity-function-galaxies/> Accessed 2017 Apr 26

[45] Setterfield B, The redshift <http://www.setterfield.org/redshift.htm> Accessed 2017 Apr 26

[46] <https://eclipse.gsfc.nasa.gov/SEgoogle/SEgoogle2001/SE2017Aug21Tgoogle.html> Accessed 2017 Apr 26

[47] <https://eclipse2017.nasa.gov/> Accessed 2017 Apr 29

COMING EVENTS

Thursday, May 11, 7:00 pm, Providence Baptist Church, 6339 Glenwood Ave., Raleigh, Room 207

This May we will discuss several science news stories and articles from the secular and creationist literature from over the past few years. The topics will include origin of life research, the discovery of nearby earth sized planets, the discovery of gravity waves, the competition between dark matter and Modified Newtonian Dynamics (MOND) for explaining astronomical observations, new evidence for a galactocentric universe, the use of DNA for computer memory, a conference on the historicity of Adam, and an upcoming total solar eclipse which will soon be visible near you.