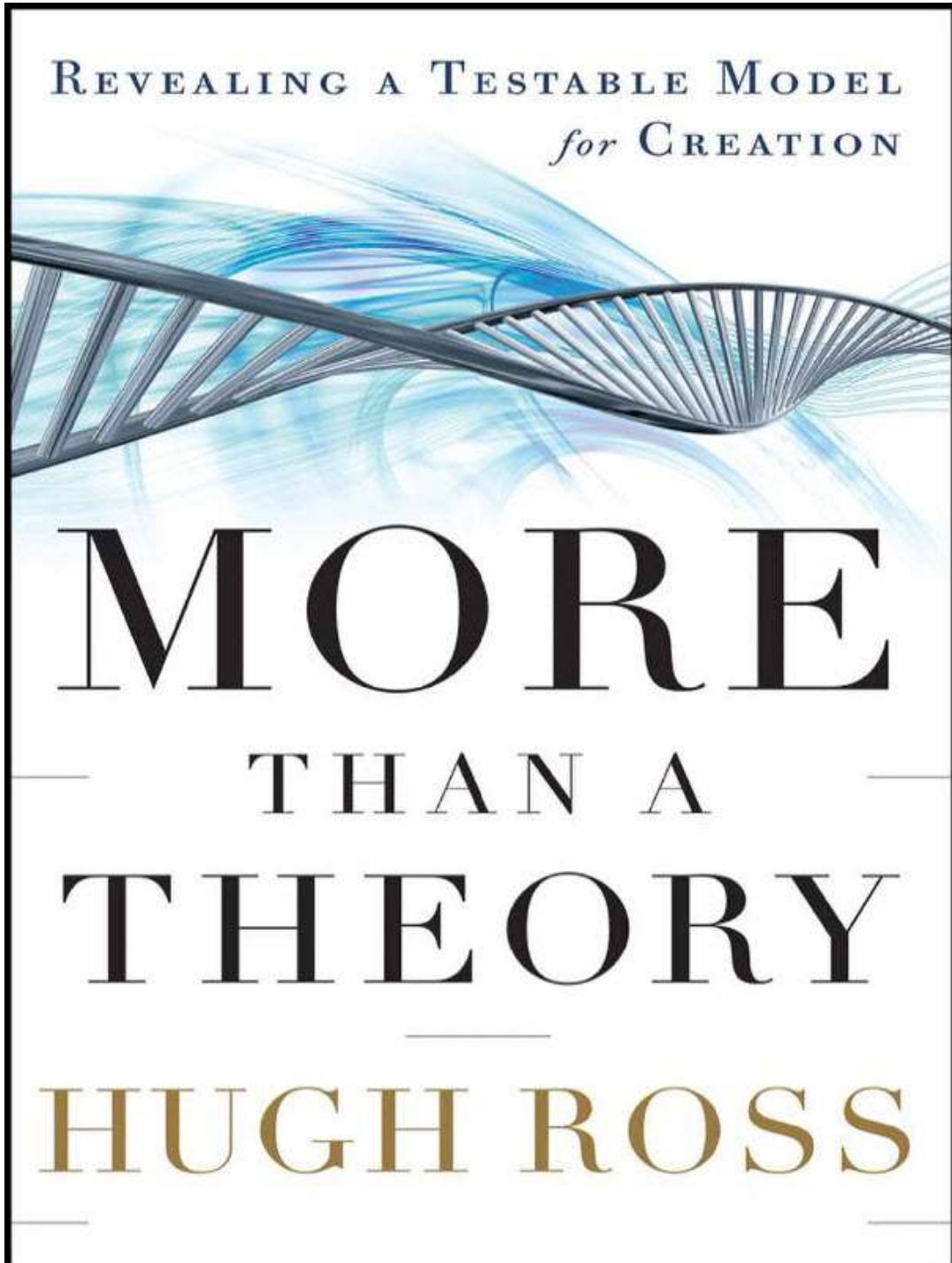


بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

More Than a Theory

Revealing a Testable Model for Creation

By: Hugh Ross



كتاب هام جداً للعالم الأمريكي «هيوروس».

الكتاب يتحدث عن فكرة في غاية الرّوعة، لا يعيبها إلا أنّها مبنية على الكتاب المقدّس، والفكرة تستحقّ أن يُنظر لها من منظور إسلامي، لأنّ الكتاب المقدّس لا يقوى على حمل فكرة بهذه القوّة بدون ثغرات أو أخطاء.

الفكرة عبارة عن وضع نظرية علمية تتعرّض للمواضيع التالية: نشأة الكون، الضّبط الدّقيق للكون، نشأة الحياة على الأرض، وأصل الإنسان، من خلال نُصوص الكتاب المقدّس فقط!

هذه النّظرية العلمي تعني أنّنا نقوم بتحديد تفاصيل كل المواضيع السّابقة بدقّة، وبشكل نظري فقط، بناءً على الموجود في الكتاب المقدّس، ثمّ نقوم باختبار صحّة ما وضعناه، من خلال مُقابلته بالكشوفات العلمي الحديثة!

والفكرة في حقيقتها مُمتازة، لكنني لا أستطيع أن آخذها بجديّة عند تطبيقها على الكتاب المقدّس، وأرى أنّه يجب تطبيق مثل هذه الفكرة على القرآن الكريم والسّنة النبوية الشّريفة، بشرط أن تكون كلّ التفاصيل المكتوبة ناتجة عن تفسير نُصوص القرآن والسّنة فقط، بدون تأثير مُسبق بسبب معرفتنا للاكتشافات العلميّة!

والموضوع مُفيد جداً لأن الإسلام والمسيحية يتقابلان في تفاصيل كثيرة مُتعلّقة بالمواضيع المذكورة سابقاً، ومن المُفيد جداً معرفة مواطن الاختلاف بين الدّينين، ثمّ البحث في كون أيّهما اتّفق مع الكشوفات العلمي الحديثة!

الكتاب يحتوي على أفكار مُمتازة جداً تستحقّ القراءة في مجال عرض المعلومات الدّينية بشكل علمي مُقنع لغير المُتدبّنين، ويتناول أيضاً مفاهيم قريبة من موضوع الإعجاز العلمي للقرآن الكريم تستحقّ الاطّلاع.

والأهمّ من كلّ هذا، بيان أنّ هناك فوارق جوهرية بين الذي يؤمن بالخلق والتصميم، وبين الذي يؤمن بالعشوائية والمادية البحتة، وبيان كيفية التّفريق بين الاثنين بشكل علمي واضح، وكذلك فكرة وضع توقّعات مُستقبلية لم يكتشفها العلم بعد بناءً على تصوّر الإياني للكون، وبيان مدى صحّة توقّعات ودقّتها.

الكتاب يستحقّ تقدير مُمتاز، وأنصح بدراسته من قِبَل المُتخصّصين، لأنّه غني بالأفكار المُفيدة المُختلفة.

1 Is It Science?

- The ideas of creation and evolution also involve discerning realities from pseudo representations. The universe, life, and humanity were either designed with purpose and meaning, or they were not. The entire cosmos either explains itself, or it does not. Creation either happened, or it's a figment of someone's imagination. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 115-117). Baker Publishing Group. Kindle Edition.]
- What a person believes about his origin colors every other part of his view on life. Strictly natural outcomes reflect no care, no reason, no hope. Yet these characteristics belong inherently to the concept of biblical creation. Because individuals behave as they believe, perspectives on evolution and creation embody a critical determinant for how people choose to live and plan their lives. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 118-120). Baker Publishing Group. Kindle Edition.]
- He says that “a universe with a supernaturally intelligent creator is a very different kind of universe from one without.” Therefore, “the presence or absence of a creative super-intelligence is unequivocally a scientific question.” [Richard Dawkins, *The God Delusion* (Boston: Houghton Mifflin, 2006), 82.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 129-131). Baker Publishing Group. Kindle Edition.]
- Eugenie Scott, executive director of the National Center for Science Education, redefines science as “an attempt to explain the natural world in terms of natural processes, not supernatural ones”. [Eugenie C. Scott, “My Favorite Pseudoscience,” *Reports of the National Center for Science Education* 23 (January–February 2003): 11.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 202-204). Baker Publishing Group. Kindle Edition.]
- Lawrence Krauss, director of the Center for Education and Research in Cosmology and Astrophysics at Case Western Reserve University, echoes this restrictive definition: “Science assumes that natural phenomena have natural causes.” [Lawrence M. Krauss, “ ‘Creationism’ Discussion Belongs

in Religion Class,” Reports of the National Center for Science Education 22 (January–April 2002): 11.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 204-206). Baker Publishing Group. Kindle Edition.]

- In an official response to creationism and intelligent design, the board of directors of the American Association for the Advancement of Science wrote, “Science is a process of seeking natural explanations for natural phenomena.” [Board of Directors, “Statement on the Teaching of Evolution,” American Association for the Advancement of Science, February 16, 2006, <http://www.aaas.org/news/releases/2006/pdf/0219boardstatement.pdf>.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 206-208). Baker Publishing Group. Kindle Edition.]
- Acknowledging the blatant censorship inherent in such redefinitions of science, Scott has tried to soften her stance by saying it’s not that science denies God’s existence or his possible role as a Creator. It’s just that science is incapable of ever detecting it. Because it is not possible to “hold constant the actions of supernatural forces” under laboratory conditions, Scott concludes that the possibility of a supernatural cause is “outside of what science can tell us.”¹⁶ She claims that science and scientific testing must be limited to direct observations of events occurring in nature or under controlled laboratory conditions. [Eugenie C. Scott, “The Big Tent and the Camel’s Nose,” Reports of the National Center for Science Education 21 (January–April 2001): 39.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 211-215). Baker Publishing Group. Kindle Edition.]
- Some may complain that the scientific community would never grant evolution critique, much less grant creation proponents top-level access. Yet Proceedings of the National Academy of Sciences, USA recently published an article critical of the evolutionary paradigm (see chapter 10, pp. 169–70).¹⁷ And RTB scientists have had opportunities to present their testable creation model before faculty and researchers at several leading universities.¹⁸ These opportunities have yielded much valuable critique for improving and extending RTB’s model. Our book *Origins of Life* garnered

a commendable review in the journal *Origins of Life and Evolution of Biospheres*,¹⁹ and some components of the RTB creation model have been published in reputable science journals.²⁰ RTB resources even prompted a Nobel laureate in chemistry to change his worldview perspective from stridently anti-Christian to ardently Christian.²¹ [17. Zachary D. Blount, Christina Z. Borland, and Richard E. Lenski, “Historical Contingency and the Evolution of a Key Innovation in an Experimental Population of *Escherichia coli*,” *Proceedings of the National Academy of Sciences, USA* 105 (June 10, 2008): 7899–7906. 18. Ohio State University, University of California at Davis, University of California at Los Angeles, University of California at Santa Barbara, University of Illinois, and Yale are recent examples. 19. David Deaner, review of *Origins of Life: Biblical and Evolutionary Models Face Off*, by Fazale Rana and Hugh Ross, *Origins of Life and Evolution of Biospheres* 37 (April 2007): 201–3. 20. David L. Block and Hugh N. Ross, “Unser Universum: Zufall oder Absicht?” ed. and trans. Gero Rupprecht, *Die Sterne* 68 (June 1992): 325–39; Jacquelyn A. Thomas and F. R. Rana, “The Influence of Environmental Conditions, Lipid Composition, and Phase Behavior on the Origin of Cell Membranes,” *Origins of Life and Evolution of Biospheres* 37 (June 2007): 267–85. 21. Richard E. Smalley won the 1996 Nobel Prize in chemistry for his contribution to the discovery of fullerenes. The RTB books most responsible for Smalley’s changed perspective were *The Creator and the Cosmos*, *Origins of Life*, *Who Was Adam*, *Beyond the Cosmos*, *The Genesis Question*, and *A Matter of Days*. For a summary of the story of Smalley’s change of perspective see “Dr. Hugh Ross’ remarks at the memorial service for Dr. Richard Smalley,” *Reasons To Believe*, November 2, 2005, http://www.reasons.org/about/staff/richard_smalley_memorial_service.shtml.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 222-229). Baker Publishing Group. Kindle Edition.]

2 Multiple Choice

- In 1984 biochemistry professor Isaac Asimov wrote “The ‘Threat’ of Creationism,” an article which has since appeared in several books, magazines, and Web postings. It warns fellow scientists and the public that

creationists are “a strong and frightening force, impervious to, and immunized against, the feeble lance of mere reason.”¹ Although creationists are a relatively small group, Asimov sees them as a threat since “smaller groups have used intense pressure and forceful campaigning—as the creationists do—and have succeeded in disrupting and taking over whole societies.”² Asimov concludes by warning that “with creationists in the saddle, American science will wither. We will raise a generation of ignoramuses. . . . We will inevitably recede into the backwater of civilization.”³ [1. Isaac Asimov, “The ‘Threat’ of Creationism,” in *Science and Creationism*, ed. Ashley Montagu (New York: Oxford University Press, 1984), 190, http://www.stephenjougould.org/ctrl/azimov_creationism.html. 2. *Ibid.*, 183. 3. *Ibid.*, 193.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 311-317). Baker Publishing Group. Kindle Edition.]

- These fears continue on a larger scale today. Parliamentarians from the forty-seven nation Council of Europe issued a resolution on October 4, 2007, in which they alerted both their member states and the world that “creationism could become a threat to human rights.”⁴ The council members saw this threat emerging from the creationists’ “total rejection of science.”⁵ They wrote, We are witnessing a growth of modes of thought which challenge established knowledge about nature, evolution, our origins and our place in the universe. . . . The “intelligent design” idea, which is the latest, more refined version of creationism, does not deny a certain degree of evolution. However, intelligent design, presented in a more subtle way, seeks to portray its approach as scientific, and therein lies the danger.⁶ [4. “Parliamentary Assembly Resolution 1580 (2007): The Dangers of Creationism in Education,” Council of Europe, October 4, 2007, <http://assembly.coe.int/main.asp?Link=/documents/adoptedtext/ta07/eres1580.htm>. 5. *Ibid.* 6. *Ibid.*] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 317-324). Baker Publishing Group. Kindle Edition.]
- On the other hand, Henry Morris, past president of the Institute for Creation Research (ICR) and for several decades the leading young-earth creationist spokesman, declared in 1988 that the theory of biological evolution must be strenuously opposed by all Christians. He said that “the bitter fruits of

widespread amorality, materialism, the drug culture, abortionism, pornography, social diseases and a host of other ills—not to mention communism and fascism” spring from the roots of evolutionary humanism.⁷ Henry Morris also accuses evolutionists of stultifying the progress of science. He wrote that evolution has produced “not one good fruit in the form of real scientific advance in either living standards or altruistic behavior.”⁸ [7. Henry M. Morris, “Is Creationism Important in Education?” *Creation* 10 (June 1988): 29–31, <http://www.answersingenesis.org/creation/v10/i3/education.asp>. 8. Henry Morris, “Why ICR—and Why Now?” *Impact*, no. 337, July 2001, ii, <http://www.icr.org/i/pdf/imp/imp-337.pdf>.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 324-330). Baker Publishing Group. Kindle Edition.]

- Is It A, B, C, D, E, F, G, or H? Each of the major participants in the controversy wants exclusive rights to the story of the cosmos and life. It’s a powerful story, one that carries enormous significance for every person on Earth. All sides seem to agree that the origins scenario holds the key to answering the great questions of life: Where did the universe and Earth come from? How did humanity get here and why? Where is life headed? Did humans invent God (or gods) out of insecurity or wishful thinking? Or is there really a God who endowed individuals with his creative and imaginative powers? Ultimately, what’s at stake is who or what determines the meaning of life. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 343-349). Baker Publishing Group. Kindle Edition.]
- In recent decades, however, the word “evolutionist” has generally been applied to someone who asserts that all the changes observed in the record of nature (including the origin and history of the universe, Earth, and all life) can be attributed to natural causes alone. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 354-356). Baker Publishing Group. Kindle Edition.]
- Historically, “creationist” referred to anyone who acknowledges that a Creator is responsible for bringing the universe and life into existence. According to that definition, nearly half of all practicing scientists are

creationists. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 361-363). Baker Publishing Group. Kindle Edition.]

- About a decade ago, however, a diverse group of creation advocates formed an alliance widely known as the intelligent design movement (IDM). Their goal is to advance public instruction about the intelligent design concept, the inference that an intelligent designer is responsible for the origin and history of life. By refraining from making a specific identification of the designer or of any specific history of the universe or life, the movement has sought to remove any religious bias and, therefore, any apparent legal basis for disallowing the teaching of intelligent design in classrooms. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 384-387). Baker Publishing Group. Kindle Edition.]
- Coupled with the old-earth adjective, this “creationist” refers to someone who, in contrast to a young-earth view, believes not only the biblical account of creation but also the findings of mainstream science. These individuals typically embrace both the truthfulness of Scripture and the scientific evidence for a multibillion-year history of the universe, Earth, and life on Earth. [See Lane Coffee, comp., “Notable Christians Open to an Old-Universe, Old-Earth Interpretation,” Reasons To Believe, http://www.reasons.org/resources/apologetics/notable_leaders/index.shtml (accessed October 11, 2005).] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 389-391). Baker Publishing Group. Kindle Edition.]
- Fully gifted creationists assert that God personally intervened in the natural order on just one occasion, the origin of the universe. According to this view, God so gifted the laws of physics and the universe at that cosmic beginning that thereafter, strictly natural processes brought about God’s desired outcomes specifically as he had planned. This particular subset of theistic evolution is scientifically indistinguishable from deism, the belief that God is responsible only for the initial creation of the universe. While some fully gifted creationists allow for the possibility of divine interventions beyond the cosmic creation event, they claim scientists can never detect such interventions. For example, the interventions of God are hidden underneath

the umbrella of the Heisenberg uncertainty principle of quantum mechanics. (One implication of the Heisenberg uncertainty principle is that causality at the quantum level remains concealed.) [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 403-409). Baker Publishing Group. Kindle Edition.]

3 Different Strategies

- With naturalism, the answers to the big questions of life become insignificant. Where did we humans come from? Random physical phenomena. Where are we going? Most likely to extinction. Such answers rarely captivate a student's curiosity or ignite the general public's imagination. Nor do they satisfy the soul's hunger for meaning, purpose, or hope. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 496-499). Baker Publishing Group. Kindle Edition.]
- Carl Wieland, himself a young-earth creationist, pinpoints another major reason for this negative response. He notes that ID theorists "refuse to be drawn on the sequence of events, or the exact history of life on Earth, or its duration."²⁷ Therefore, "they can never offer a 'story of the past.'"²⁸ He asks, "If the origins debate is not about a 'story of the past,' what is it about?"²⁹ [27. Carl Wieland, "AiG's Views on the Intelligent Design Movement," Answers in Genesis, August 30, 2002, http://www.answersingenesis.org/docs2002/0830_IDM.asp.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 565-568). Baker Publishing Group. Kindle Edition.]
- In Dover, Pennsylvania, United States District Judge John E. Jones III ruled, "the overwhelming evidence at trial established that ID is a religious view, a mere relabeling of creationism, and not a scientific theory." [Tammy Kitzmiller et al. v. Dover Area School District et al., case 4:04-cv-02688-JEJ (M.D. Penn. 2005), page 43, http://www.pamd.uscourts.gov/kitzmiller/kitzmiller_342.pdf.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 579-580). Baker Publishing Group. Kindle Edition.]

4 An Objective Testing Method

- Typically, researchers hold fast to an existing model, defects and all, until they

see how an alternate model works better in five ways. The new model must: 1. give a wider and more detailed view of what's going on; 2. make better sense of established data; 3. provide more reasonable and consistent explanations for the phenomena under investigation; 4. result in fewer unexplained anomalies and gaps; 5. prove more successful in anticipating or predicting future findings. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 810-815). Baker Publishing Group. Kindle Edition.]

5 Resources and Standards for RTB's Model

- (This list of data has been highly abbreviated. Endnotes indicate where more extensive explanations of specific aspects of RTB's creation model can be found.) Relevant scientific data includes the:

1. beginning of the universe about 13.73 billion years ago³
2. beginning of cosmic space-time configuration⁴
3. transcendence of the cause for the beginning of space, time, matter, and energy
4. adequate dimensionality, in addition to length, width, height, and time, to account for the pervasive coexistence of gravity and quantum mechanics (a total of ten dimensions)
5. distribution of matter and energy across the cosmic space-time surface
6. precise values of the physical laws and constants necessary to make physical life possible⁵
7. constancy of the physical laws and constants⁶
8. exquisitely fine-tuned continuous cosmic expansion essential to life⁷
9. continuous cooling of cosmic background radiation from near infinite temperature
10. degree of cosmic uniformity and homogeneity
11. relative abundances of the elements before the advent of stars
12. buildup and relative abundances of nonradiometric elements heavier than helium
13. history of the relative abundances of radiometric isotopes
14. size of the universe⁸
15. cosmic dominance of darkness rather than light
16. location and abundance of exotic matter relative to ordinary matter

17. anthropic principle⁹
18. anthropic principle inequality¹⁰
19. optimized location for viewing the cosmos¹¹
20. optimized time window for viewing the cosmos¹²
21. Milky Way Galaxy's past merging, collision, and close flybys with other galaxies
22. cosmic timing of the peak abundances for uranium and thorium
23. timing and locations of supernovae occurrences at Earth's solar system origin site¹³
24. timing and all other details of an early collision between a Mars-sized body and Earth¹⁴
25. effects and timing of the Late Heavy Bombardment¹⁵
26. lack of evidence for possible extraterrestrial intelligence (ETI)¹⁶
27. lack of any known possible location for the existence of ETI¹⁷
28. uniqueness of Earth's solar system among all observed planetary systems for the possible support of advanced life
29. absence of detected life on other solar system bodies
30. extraordinary life-essential properties of the Earth-Moon system
31. transfer of the Sun's orbit from its birthing position
32. position of the Sun's orbit relative to the Milky Way Galaxy's co-rotation distance
33. timing of the solar system's last crossing of a spiral arm
34. decline (by a factor of six) in Earth's rotation rate
35. decline (by a factor of five) in Earth's heat from radioactive decay
36. long-term stability and strength of Earth's terrestrial magnetic field and internal dynamo
37. Earth's plate-tectonic history
38. absence of terrestrial prebiotics
39. absence of any known extraterrestrial source of concentrated prebiotics
40. absence of any known amino acids, nucleotides, or 5-carbon sugars in interstellar molecular clouds
41. lack of any abiotic terrestrial source for homochiral building blocks of biomolecules
42. lack of any known extraterrestrial source for homochiral building blocks of biomolecules

43. early timing of life's origin18
44. suddenness of life's origin19
45. complexity and diversity of Earth's first life
46. lack of a primordial soup20
47. predominance of bacterial life for the first 3 billion years of life's history
48. ubiquity and complexity of biochemical design21
49. ubiquity and complexity of biochemical organization22
50. history and diversity of Earth's sulfate-reducing bacteria23
51. history and location of cryptogamic colonies24
52. Earth's oxygenation history25
53. stellar mass loss during early and late periods of stellar burning
54. stellar brightening during the middle and late periods of stellar burning
55. Sun's dimming (by 15 percent) during its first 1.5 billion years26
56. Sun's brightening (by 15 percent) during the past 3 billion years
57. current extreme, short-lived stability of the Sun's luminosity
58. capacity of the past history of life to adjust Earth's atmosphere so as to perfectly compensate for changes in the Sun's luminosity
59. pattern of advances in life's complexity
60. history and abundances of water-soluble elemental (but life-essential) poisons
61. Avalon explosion
62. Cambrian explosion27
63. frequency and magnitude of mass speciation events28
64. frequency and magnitude of mass extinction events29
65. rapidity and diversity of life's recovery from mass extinction events
66. rate of progression from simple to complex life-forms
67. rate of appearance of new species of large body-sized organisms
68. rapid appearance of higher-metabolism, larger-bodied species after each oxygenation event
69. Lazarus taxa phenomena30
70. occurrence of biological and biomolecular convergence events (repeated evolutionary outcomes)31
71. DNA similarities among diverse species32
72. sudden recent cessation of speciation33
73. timing of Earth's petroleum production peak34
74. timing of Earth's petroleum storage peak35

75. history and frequency of multiple-species symbiosis³⁶
76. emergence of a self-preservation drive in life
77. emergence of the uniquely human drive for meaning (a sense of hope, purpose, and destiny)
78. emergence of “soulish” behavior as expressed in higher animals
79. diversity of “soulish” behavior in higher animals
80. motivation of higher animals to serve or please humans in diverse ways
81. emergence of “spiritual” behavior as expressed in humans
82. human capacity for altruism
83. human capacity for evil³⁷
84. quantity and diversity of expressions of altruism in nature
85. social structure and division of labor among certain insect species
86. timing of vascular plants’ origin, diversity, and proliferation
87. ubiquity and diversity of carnivores and parasites³⁸
88. ubiquitous optimization of ecological relationships throughout life’s history on Earth
89. longevity and stability of various species in the fossil record
90. abundance of transitional forms among large-bodied, low-population species³⁹
91. scarcity of transitional forms among small-bodied, large-population species
92. rapid development of optimized ecologies⁴⁰
93. apparent “bad designs” in complex organisms⁴¹
94. absence of “bad designs” in simple organisms and inorganic structures
95. life spans of various species
96. DNA similarities and differences among humans, Neanderthals, and chimpanzees⁴²
97. low population levels of hominid species
98. absence of any evidence for evolution within hominid species
99. timing and other characteristics of humanity’s origin⁴³
100. cultural “big bangs” in the arrival of jewelry, art, technology, clothing, communication
101. changes in the human life span⁴⁴
102. uniqueness of human characteristics and capabilities⁴⁵
103. over-endowment for humanity’s basic survival⁴⁶
104. location of humanity’s origin

105. timing of the Neolithic revolution in human culture
 106. descent of modern humans from one man⁴⁷ (or a few men and from one woman or a few women)
 107. narrow physical limits on the time window for human civilization⁴⁸
 108. broad physical limits on the time window for simple life-forms
 109. optimization of the physical laws and constants for restraining evil
- [3. Hugh Ross, *Creator and the Cosmos*, 3rd ed. (Colorado Springs: NavPress, 2001), 23–136; Hugh Ross, *Beyond the Cosmos*, 2nd ed. (Colorado Springs: NavPress, 1999), 27–52; Hugh Ross, “A Beginner’s—and Expert’s—Guide to the Big Bang,” *Facts for Faith*, no. 3, third quarter 2000, 14–32. 4. Ross, *Fingerprint of God*, 107–18; Ross, *Creator and the Cosmos*, 99–136; Ross, *Beyond the Cosmos*, 27–46; Hugh Ross, “Cosmic Brane Scans,” *Facts for Faith*, no. 10, third quarter 2002, 13; Hugh Ross, “Predictive Power: Confirming Cosmic Creation,” *Facts for Faith*, no. 9, second quarter 2002, 32–39. 5. Hugh Ross, “The Physics of Sin,” *Facts for Faith*, no. 8, first quarter 2002, 46–51; Ross, *Creator and the Cosmos*, 145–67; Hugh Ross, “Physicalism and Free Will,” *Facts for Faith*, no. 7, fourth quarter 2001, 48; Hugh Ross, “Time and the Physics of Sin,” in *What God Knows*, ed. Harry Lee Poe and J. Stanley Mattson (Waco: Baylor University Press, 2005), 121–36. 6. Ross, *Matter of Days*, 97–120, 163–214; Ross, “Time and the Physics of Sin,” 121–36. 7. Ross, *Fingerprint of God*, 53–118; Ross, *Creator and the Cosmos*, 23–98, 150–57; Ross, “Predictive Power,” 32–39; Hugh Ross, “Facing Up to Big Bang Challenges,” *Facts for Faith*, no. 5, first quarter 2001, 42–53. 8. Ross, *Creator and the Cosmos*, 50–53, 150–57; Hugh Ross, “The Haste to Conclude Waste,” *Facts & Faith*, third quarter 1997, 1–3; Hugh Ross, Kenneth Samples, and Mark Clark, *Lights in the Sky and Little Green Men* (Colorado Springs: NavPress, 2002), 33–41, 161–62. 9. Ross, *Fingerprint of God*, 119–38; Ross, *Creator and the Cosmos*, 45–67, 137–212; Hugh Ross, “Anthropic Principle: A Precise Plan for Humanity,” *Facts for Faith*, no. 8, first quarter 2002, 24–31; Ross, “Predictive Power,” 32–39; Guillermo Gonzalez and Hugh Ross, “Home Alone in the Universe,” *First Things*, no. 103, May 2000, 10–12. 10. Ross, *Matter of Days*, 218–20; Ross, “Time and the Physics of Sin,” 121–36; Hugh Ross, “The Faint Sun Paradox,” *Facts for Faith*, no. 10, third quarter 2002, 26–33. 11. Ross, *Creator and the Cosmos*, 56, 179, 183; Ross, “Time and the Physics of Sin,” 121–36; Guillermo Gonzalez and Jay W. Richards, *The Privileged Planet* (Washington, D.C.: Regnery, 2004); Ross, “Anthropic Principle,” 24–31. 12. Ross, *Creator and*

the Cosmos, 56, 179, 183; Ross, "Time and the Physics of Sin," 121–36; Gonzalez and Richards, *Privileged Planet*; Ross, "Anthropic Principle," 24–31. 13. Ross, *Creator and the Cosmos*, 176–78; Fazale Rana and Hugh Ross, *Origins of Life* (Colorado Springs: NavPress, 2004), 211–13. 14. Ross, *Creator and the Cosmos*, 184–85; Rana and Ross, *Origins of Life*, 87–88. 15. Rana and Ross, *Origins of Life*, 72–73, 82–85; Hugh Ross, Fazale Rana, and Krista Bontrager, "Magma Ocean," *Creation Update*, May 18, 2004, http://www.reasons.org/resources/multimedia/rtbradio/archives_creation_update/200401-06archives.shtml. 16. Hugh Ross, *Why the Universe Is the Way It Is* (Grand Rapids: Baker, 2008), 57–58. 17. Ross, Samples, and Clark, *Lights in the Sky and Little Green Men*, 33–54. 18. Rana and Ross, *Origins of Life*, 63–92. 19. *Ibid.* 20. *Ibid.* 21. Rana and Ross, *Origins of Life*, 93–181; Fazale Rana, "Yet Another Use for 'Junk' DNA," *Facts for Faith*, no. 3, third quarter 2000, 56–57; Fazale R. Rana, "Protein Structures Reveal Even More Evidence for Design," *Facts for Faith*, no. 4, fourth quarter 2000, 4–5. 22. Rana and Ross, *Origins of Life*, 93–181; Fazale R. Rana, "30% Inefficiency by Design," *Facts for Faith*, no. 6, second quarter 2001, 10–11. 23. Rana and Ross, *Origins of Life*, 74–75, 217; Hugh Ross, "Bacteria Help Prepare Earth for Life," *Connections*, first quarter 2001, 4. 24. Rana and Ross, *Origins of Life*, 219; Hugh Ross, "The Case for Creation Grows Stronger," *Facts & Faith*, first quarter 1990, 1–3. 25. Rana and Ross, *Origins of Life*, 218–20. 26. Rana and Ross, *Origins of Life*, 213–22; Ross, "Faint Sun Paradox," 26–33. 27. Fazale Rana, "New Insight into the Ecology of the Cambrian Fauna: Evidence for Creation Mounts," *Facts for Faith*, no. 3, third quarter 2000, 54–55; Fazale Rana and Hugh Ross, "'Exploding' with Life! Interview with Dr. Paul Chien," *Facts for Faith*, no. 2, second quarter 2000, 12–17; Fazale Rana, "The Explosive Appearance of Skeletal Designs," *Facts for Faith*, no. 3, third quarter 2000, 52–53; Hugh Ross, "Biology's Big Bang #2," *Facts & Faith*, fourth quarter 1993, 2–3; Fazale R. Rana, "Cambrian Flash," *Connections*, first quarter 2000, 3. 28. Hugh Ross, *The Genesis Question*, 2nd ed. (Colorado Springs: NavPress, 2001), 50–53; Rana and Ross, *Origins of Life*, 82–84, 215–31; Hugh Ross, "Creation on the 'Firing Line,'" *Facts & Faith*, first quarter 1998, 6–7; Hugh Ross, "Fungus Paints Darker Picture of Permian Catastrophe," *Facts & Faith*, second quarter 1996, 3; Hugh Ross, "Life's Fragility," *Facts & Faith*, third quarter 1994, 4–5; Hugh Ross, "Dinosaurs and Cavemen: The Great Omission?" *Facts & Faith*, third quarter 1992, 6–7; Hugh Ross, "Dinosaurs' Disappearance No

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humans being descended from one or a few men and one or a few women. 48. Ross, “Time and the Physics of Sin,” 121–36.]

[Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 906-1013). Baker Publishing Group. Kindle Edition.]

6 The Biblical Structure Of RTB’s Creation Model

- The following details (with the exception of 9 and 10) have already been confirmed by twentieth-century cosmologists: 1. The universe has a beginning in finite time (see Gen. 1:1; 2:3–4; Ps. 148:5; Isa. 40:26; 42:5; 45:18; John 1:3; Col. 1:15–17; Heb. 11:3). 2. The beginning of space and time coincides with the beginning of the physical universe (Gen. 1:1; Col. 1:15–17; 2 Tim. 1:9; Titus 1:2; Heb. 11:3). 3. The material universe was not made from that which is material, visible, or detectable (Heb. 11:3). 4. The universe has been continuously expanding from the beginning of space and time (Job 9:8; Ps. 104:2; Isa. 40:22; 42:5; 44:24; 45:12; 48:13; 51:13; Jer. 10:12; 51:15; Zech. 12:1). 5. The expansion of the universe appears precisely guided for the benefit of life (Job 9:8; Isa. 44:24; 45:12; 48:13). 6. The expansion of the universe resembles the spreading out and setting up of a tent (Ps. 104:2; Isa. 40:22). 7. The universe functions according to fixed physical laws (Jer. 33:25). 8. The entire universe is subject to those physical laws (Rom.8:20–22). 9. The universe has an ending in finite time (Job 14:12; Eccles. 12:2; Isa. 34:4; 51:6; 65:17; 66:22; Matt. 24:35; Heb. 1:10–12; 12:27–28; 2 Peter 3:7,10–13; Rev. 21:1–5). 10. At its end, the universe will roll up like a scroll and vanish in a burst of extreme heat (Isa. 34:4; 2 Peter 3:7, 10; Rev. 6:14). [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1256-1270). Baker Publishing Group. Kindle Edition.]
- The last species to appear on Earth, human beings (*Homo sapiens sapiens*), manifests not only far greater soulful capacities but also a unique characteristic the Bible identifies as “spirit.”¹⁹ No other species, past or present, expresses spirituality as defined by an innate: • awareness of right and wrong, or conscience; • awareness of mortality and concerns about what lies beyond death; • hunger for hope, purpose, and destiny; • compulsion to discover and create; • capacity for analysis, mathematics, and meditation; • capacity to recognize beauty, truth, logic, and absolutes; • propensity to

worship and communicate with a deity. [Kenneth Richard Samples, *A World of Difference* (Grand Rapids: Baker, 2007), 171–88.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1322-1330). Baker Publishing Group. Kindle Edition.]

- The story of life, death, and new life is part of RTB’s biblical model. It does not contradict New Testament statements about the kind of death that originated with Adam.²⁰ Romans 5:12 clarifies this position: “Sin entered the world through one man, and death through sin, and in this way death came to all men, because all sinned.” This death, introduced by Adam’s sin, applies strictly to humans.²¹ The whole of Scripture confirms that only humans, among all life created on Earth, can (and do) sin. Therefore, this “death through sin” applies to humans alone, not to plants and animals. In addition, the passage states specifically that this “death came to all men.” It does not say “to all creation” or “to all creatures.” The verses make no apparent reference to plant or animal life, nor do other parallel passages (see 1 Cor. 15:20–23). [Only one New Testament passage besides Romans 5:12 pertains to this subject. First Corinthians 15:21–23 states, “For since death came through a man, the resurrection of the dead comes also through a man. For as in Adam all die, so in Christ all will be made alive. But each in his own turn: Christ, the firstfruits; then, when he comes, those who belong to him.” This context clearly limits death because of sin to human beings. ²¹. For more on this topic, see Ross, *A Matter of Days*, 97–109.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1349-1356). Baker Publishing Group. Kindle Edition.]
- A very different world could have been created. The New Testament’s closing chapters show how different God’s future creation will be. Revelation 21 and 22, along with other passages in Scripture, describe how the new creation will operate by radically different physics and dimensionality. Some of these characteristics apparently include:²⁵
 - a much more expansive habitat for humanity than is possible in this universe
 - radically different creation laws and constants (no thermodynamics, no gravity, no electromagnetism)
 - no decay, no death, no pain, no evil, no regrets, no grief
 - no darkness, no shadows
 - no sun, no stars, and yet light everywhere
 - different dimensionality
 - unimaginable splendor, joy, beauty, peace, and love
 - greatly expanded access to knowledge
 - multiple simultaneously intimate

relationships that eclipse the need or desire for marriage (or sex) and families

- unlimited relational delight
- unlimited capacity for pleasure
- wholly meaningful and satisfying work
- opportunity to lead and instruct angels [For an in-depth discussion of life beyond the present creation, see Ross, *Beyond the Cosmos.*] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1394-1407). Baker Publishing Group. Kindle Edition.]

- The universe, which
 - began (once) in finite time;
 - has a beginning that coincides with the beginning of space and time;
 - was not made from that which is material, visible, or detectable;
 - continuously expands from the beginning;
 - is governed by constant laws of physics;
 - manifests precise fine-tuning for humanity's benefit;
 - has enormous volume, encompassing an “uncountable” (to ancient peoples) number of stars;
 - contains stars that differ from one another and eventually stop shining;
 - contains stars that differ from one another and eventually stop shining;
 - will someday cease to exist. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1428-1436). Baker Publishing Group. Kindle Edition.]
- Earth, which
 - emerged from the cosmos at a specific time;
 - was enshrouded by an opaque cloud layer in the beginning;
 - began with an ocean that covered its whole surface;
 - was precisely fine-tuned for humanity's benefit;
 - contains resources essential for launching and sustaining human civilization;
 - has a Sun and Moon and other astronomical companions specially designed to benefit life and humanity;
 - carries finite resources and time-limiting conditions for sustaining human civilization. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1437-1443). Baker Publishing Group. Kindle Edition.]
- Life, which
 - began early in Earth's history;
 - began under hostile conditions;
 - began by divine intervention;
 - began with optimal ecological relationships;
 - began with optimal design for environmental conditions;
 - appeared in abundance, in diversity, and for long eras for the specific benefit of humanity;
 - started as physical only (most life-forms); then soulful creatures (many species) appeared; and finally, one spiritual species was introduced—an original pair of humans and all their descendents;
 - progresses from simple

to complex through a series of extinction and replacement (speciation) events; • reflects shared common designs; • in its soulful characteristics, appears designed to serve and/or please humanity. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1444-1453). Baker Publishing Group. Kindle Edition.]

- Humanity, which • arrived late in Earth's history; • resulted from divine intervention; • represents the culmination of God's creation work on Earth; • remains the only earthly creature with a spiritual nature; • descended from one man and one woman who lived in a God-designed garden near the juncture of Africa, Asia, and Europe; • migrated rapidly from area of origin shortly after the flood of Noah's time; • experienced a significant drop in the potential life span after the time of the flood; • genetically bottlenecked at a later date for males than for females (because male flood survivors were all biologically related to Noah, whereas females were not related to one another); • was gifted from the outset with attributes needed for functioning in a high-tech civilization. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1453-1463). Baker Publishing Group. Kindle Edition.]

7 Putting RTB's Model For The Cosmos To The Test

- Prior to 1970, astronomers knew the universe had a beginning but understood little about exactly how the universe got its start. Then two physicists, Stephen Hawking and Roger Penrose, produced the first space-time theorems of general relativity.² Their theorem proved, within the framework of classical general relativity, that if the universe contains mass and if the equations of general relativity reliably describe the universe's dynamics, then its space and time dimensions must have had a beginning that coincides with the universe's origin. [Stephen Hawking and Roger Penrose, "The Singularities of Gravitational Collapse and Cosmology," Proceedings of the Royal Society of London, Series A 314 (1970): 529–48.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1520-1523). Baker Publishing Group. Kindle Edition.]
- Today, astronomers have performed more than a dozen independent tests of general relativity and have confirmed the reliability of general relativity to describe the dynamics of the universe to better than 0.000000000001 percent

precision. British mathematical physicist Sir Roger Penrose, coauthor of the first space-time theorem, said, “This makes Einstein’s general relativity, in this particular sense, the most accurately tested theory known to science.”⁵ The thoroughness of testing and the precision of results combined with the breadth of the space-time theorems leave no reasonable basis for doubting that a causal Agent outside space and time brought the universe of space, time, matter, and energy into existence.⁶ [Roger Penrose, *Shadows of the Mind* (New York: Oxford University Press, 1994), 230. 6. Ross, *Beyond the Cosmos*, 33–35.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1534-1540). Baker Publishing Group. Kindle Edition.]

- In 1970 astronomers possessed only three methods for determining the universe’s origin date. None of them yielded a date any more accurate than ± 35 percent. Today, many independent lines of measurement now validate, with better than 1 percent precision, that the universe began 13.73 billion years ago.⁷ [E. Komatsu et al., “Five-Year Wilkinson Microwave Anisotropy Probe (WMAP) Observations: Cosmological Interpretation,” *Astrophysical Journal Supplement*, forthcoming; Jonathan Coles, “A New Estimate of the Hubble Time with Improved Modeling of Gravitational Lenses,” *Astrophysical Journal* 679 (May 20, 2008): 17–24.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1540-1542). Baker Publishing Group. Kindle Edition.]
- Today astronomers possess many distinct tests for the nature of the ongoing cosmic expansion. Six of the most dramatic and explicit include the: 1. law of redshifts (galaxy velocity–galaxy distance relationship); 2. spreading apart of galaxies and galaxy clusters; 3. Tolman test for the surface brightness of identical objects; 4. lifetimes of supernova eruptions and gamma-ray bursts; 5. population statistics of stars and planets; 6. cooling of cosmic background radiation. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1619-1625). Baker Publishing Group. Kindle Edition.]
- Tolman Test In 1930 Caltech physicist Richard Tolman proposed an elegant test to determine whether observed redshifts indeed result from the universe’s general expansion.¹⁵ He demonstrated that the surface brightness

of certain objects would be dramatically diminished (from being stretched out over a larger area) if the universe is expanding. In a nonexpanding universe, the surface brightness of identical objects would be the same everywhere, with no dimming. Surface brightness measurements of numerous astronomical bodies made possible by the Hubble Space Telescope revealed the exact degree of dimming predicted by the ongoing expansion of the cosmos.¹⁶ [Richard C. Tolman, *Relativity, Thermodynamics, and Cosmology* (New York: Oxford University Press, 1934): 467. 16. Allan Sandage and Lori M. Lubin, “The Tolman Surface Brightness Test for the Reality of the Expansion. I. Calibration of the Necessary Local Parameters,” *Astronomical Journal* 121 (May 2001): 2271–88; Lori M. Lubin and Allan Sandage, “The Tolman Surface Brightness Test for the Reality of the Expansion. II. The Effect of the Point-Spread Function and Galaxy Ellipticity on the Derived Photometric Parameters,” *Astronomical Journal* 121 (May 2001): 2289–2300; Lori M. Lubin and Allan Sandage, “The Tolman Surface Brightness Test for the Reality of the Expansion. III. Hubble Space Telescope Profile and Surface Brightness Data for Early-Type Galaxies in Three High-Redshift Clusters,” *Astronomical Journal* 122 (September 2001): 1071–83; Lori M. Lubin and Allan Sandage, “The Tolman Surface Brightness Test for the Reality of the Expansion. IV. A Measurement of the Tolman Signal and the Luminosity Evolution of Early-Type Galaxies,” *Astronomical Journal* 122 (September 2001): 1084–1103.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1652-1657). Baker Publishing Group. Kindle Edition.]

- **Supernova Eruptions and Gamma-ray Bursts:** In the Milky Way, an exploding star (a supernova) takes about seven months to transition from maximum to minimum brightness, while a typical gamma-ray burst near our galaxy takes an average of about 15 seconds to undergo this same transition. Observations show these transitions take longer, by the exact amounts consistent with their distances, for a universe that has rapidly expanded for the past 13.73 billion years.¹⁷ [S. Blondin et. al., “Time Dilation in Type Ia Supernova Spectra at High Redshift,” *Astrophysical Journal* 682 (August 1, 2008): 724–36; B. Leibundgut et al., “Time Dilation in the Light Curve of the Distant Type Ia Supernova SN 1995K,” *Astrophysical Journal Letters* 466 (July 20, 1996):

L21–L24; A. G. Riess et al., “Time Dilation from Spectral Feature Age Measurements of Type Ia Supernovae,” *Astronomical Journal* 114 (August 1997): 722–29; G. Goldhaber et al., “Observation of Cosmological Time Dilation Using Type Ia Supernovae as Clocks,” in *Thermonuclear Supernovae*, Proceedings of the NATO Advanced Study Institute, held in Begur, Girona, Spain, June 20–30, 1995, NATO Advanced Science Institutes, series C, 486, ed. P. RuizLaPuente, R. Canal, and J. Isern (Dordrecht, Netherlands: Kluwer Academic Publishers, 1997): 777–84; G. Goldhaber et al., “Timescale Stretch Parameterization of Type Ia Supernova B-Band Light Curves,” *Astrophysical Journal* 558 (September 1, 2001): 359–68; Ming Deng and Bradley E. Schaefer, “Time Dilation in the Peak-to-Peak Timescales of Gamma-Ray Bursts,” *Astrophysical Journal Letters* 502 (August 1, 1998): L109–L113.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1662-1665). Baker Publishing Group. Kindle Edition.]

- A cosmos expanding too slowly produces only neutron stars and black holes.¹⁹ A universe expanding too rapidly produces no stars at all and, therefore, no planets.²⁰ Astronomers and physicists note that the two factors governing the expansion rate (cosmic mass density and cosmic dark energy density) reflect the most exquisite fine-tuning anywhere in the sciences. [Ross, *Creator and the Cosmos*, 151. 20. *Ibid.*, 150–51.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1679-1682). Baker Publishing Group. Kindle Edition.]
- According to recent studies, the universe can produce the kinds of galaxies, stars, planets, and chemical elements essential for the existence of physical life only if the cosmic mass density is fine-tuned to at least one part in 10⁶⁰. That’s the result if there were no dark energy factor (the self-stretching property of the cosmic surface) contributing to cosmic expansion. If dark energy does exist, the fine-tuning of the cosmic mass density is reduced, but does not go away. For example, independent of dark energy, the universe would fail to produce life-essential heavy elements in the required abundances and in the necessary locations unless the mass densities of both ordinary and exotic matter are fine-tuned. However, while dark energy reduces the fine-tuning of the cosmic mass density, it in no way weakens the case for design. Instead it implies the most spectacular fine-tuning known to

humanity.²¹ [Ross, *Why the Universe Is the Way It Is*, 39–41, 209–11.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1682-1689). Baker Publishing Group. Kindle Edition.]

- For life to be possible, the cosmic dark energy density that governs the degree to which the cosmic space surface stretches must be fine-tuned to at least one part in 10^{120} . This quantity, 10^{120} , exceeds the number of protons and neutrons in the observable universe by 100 billion quadrillion quadrillion times.²² Fine-tuning to within one part in 10^{120} exceeds by a factor of more than a million quadrillion quadrillion quadrillion quadrillion quadrillion times the best engineering achievements of the human race.²³ In the face of such a staggeringly high degree of fine-tuning, even nontheistic scientists have made bold concessions. Given the existence of dark energy, one research team said, “Arranging the universe as we think it is arranged would have required a miracle. . . . It seems an external agent intervened in cosmic history for reasons of its own.”²⁴ [22. It also exceeds by 1097 times the fine-tuning in what probably is humanity’s best engineering achievement, a gravity wave telescope that can make length measurements with a precision of one part in 1023. 23. The Laser Interferometer Gravitational-Wave Observatory (LIGO) currently ranks as the most exquisitely designed instrument ever made operational by humanity. It can make length measurements to within one part in 1023. This one part in 1023, however, ranks 1097 times inferior to the level of fine-tuning design present in cosmic dark energy. Such fine-tuning implies that the causal Agent that brought into existence the universe must be at least 1097 times more knowledgeable and more intelligent than the Caltech and MIT physicists that designed LIGO and 1097times more powerful than the U.S. government that funded LIGO. 24. Lisa Dyson, Matthew Kleban, and Leonard Susskind as quoted by Philip Ball, “Is Physics Watching Over Us?” <http://www.nature.com/nsu/020812/020812-2.html> (accessed August 14, 2002). The preprint to which Philip Ball refers (arXiv:hep-th/0208013v1 1 Aug 2002) was published in October 2002 by the Journal of High Energy Physics: Lisa Dyson, Matthew Kleban, and Leonard Susskind, “Disturbing Implications of a Cosmological Constant,” <http://ej.iop.org/links/q72/EzjZUjDJyeH0t0iDSa6pPg/jhep102002011.pdf>

(accessed April 2, 2006). Pertinent quotes are: (1) “Some Unknown agent initially started the inflation high up on its potential,” 1; (2) “the world started in a state of exceptionally low entropy. . . . However, there is no universally accepted explanation of how the universe got into such a special state,” 2; (3) “The question then is whether the origin of the universe can be a naturally occurring fluctuation, or must it be due to an external agent which starts the system out in a specific low entropy state?” 4; (4) “Perhaps the only reasonable conclusion is that we do not live in a world [universe] with a true cosmological [dark energy] constant,” 18.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1689-1697). Baker Publishing Group. Kindle Edition.]

- Brandon Carter, the British mathematician who first used the term “anthropic principle” in the scientific literature,³³ observed a stunning temporal imbalance: the universe took billions of years to prepare for a species with the potential to survive no longer than a few million years. Carter called this imbalance between the minimum possible time required for the emergence of human life and the maximum time span for humanity’s survival, the “anthropic principle inequality.”³⁴ [33. Brandon Carter, “Large Number Coincidences and the Anthropic Principle in Cosmology,” *Confrontation of Cosmological Theories with Observational Data*, ed. M. S. Longair (Dordrecht, Netherlands: D. Reidel, 1974), 291–98. 34. Brandon Carter, “The Anthropic Principle and Its Implications for Biological Evolution,” *Philosophical Transactions of the Royal Society A* 310 (December 20, 1983): 347–63.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1826-1830). Baker Publishing Group. Kindle Edition.]
- Physicists John Barrow and Frank Tipler later showed that this inequality is far more extreme than originally thought. They calculated that human civilization with the benefits of some technology and organized social structure can last no longer than 41,000 years.³⁵ Furthermore, Barrow and Tipler demonstrated that the inequality exists for any conceivable intelligent physical species under any realistically possible life-support conditions.³⁶ [John D. Barrow and Frank J. Tipler, *The Anthropic Cosmological Principle* (New York: Oxford University Press, 1986), 556–70.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle

Locations 1830-1833). Baker Publishing Group. Kindle Edition.]

- Physicists have calculated that physical life is impossible unless the universe is exceptionally uniform and homogeneous. As expected, astronomers see the same abundance of elements and density of matter and energy no matter where in the cosmos they look. Life also requires that virtually all constants of physics remain fixed to an extremely high degree throughout cosmic history, or at least since protons and neutrons formed. When astronomers make direct measurements of the values of physical constants at various epochs in cosmic history, they find remarkable consistency. In some cases possible variations prove less than two parts per 10 trillion per year—over the past twelve billion years.⁴² Laboratory measurements yield variation limits as small as two parts per quadrillion per year.⁴³ [42. John N. Bahcall, Charles L. Steinhardt, and David Schlegel, “Does the Fine-Structure Constant Vary with Cosmological Epoch?” *Astrophysical Journal* 600 (January 10, 2004): 520–43; P. C. W. Davies, Tamara M. Davis, and Charles H. Lineweaver, “Cosmology: Black Holes Constrain Varying Constants,” *Nature* 418 (August 8, 2002): 602–3; Alexander Y. Potekhin et al., “Testing Cosmological Variability of the Proton-to-Electron Mass Ratio Using the Spectrum of PKS 0528–250,” *Astrophysical Journal* 505 (October 1, 1998): 523–28; D. B. Guenther, L. M. Krauss, and P. Demarque, “Testing the Constancy of the Gravitational Constant Using Helioseismology,” *Astrophysical Journal* 498 (May 10, 1998): 871–76. 43. E. Peik et al., “Limit on the Present Temporal Variation of the Fine Structure Constant,” *Physical Review Letters* 93 (October 18, 2004), doi: 10.1103/PhysRevLett.93.170801, <http://prola.aps.org/abstract/PRL/v93/i17/e170801>.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1860-1866). Baker Publishing Group. Kindle Edition.]

8 Putting RTB’s Model For Galaxies, Stars, And Planets To The Test

- Are There Solar Twins? Astronomers Jorge Meléndez and Iván Ramírez have spent most of their careers searching for a star that duplicates the Sun’s capability to make intelligent life possible on a planet that orbits that particular star. They recently wrote: The question of whether the Sun is unique or not [is] a question that has important philosophical consequences. An anomalous Sun favors some forms of the anthropic principle.² [Jorge

Meléndez and Iván Ramírez, “HIP 56948: A Solar Twin with a Low Lithium Abundance,” *Astrophysical Journal Letters* 669 (November 10, 2007): L92.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1933-1937). Baker Publishing Group. Kindle Edition.]

- Does a True Solar Twin Exist? In a research paper published November 10, 2007, Meléndez and Ramírez claimed they had finally found a true solar counterpart.⁵ They presented measurements on the star HIP 56948 showing a mass and temperature identical to the Sun’s. In addition, the lithium abundance appeared nearly the same. Meléndez and Ramirez identified HIP 56948 as a “true solar twin” by searching through a sample of more than 100,000 stars in the Hipparcos catalog of stars. This catalog lists accurate distance determinations, which are crucial for establishing an individual star’s precise properties. The characteristics of HIP 56948 are listed in table 8.2 along with the features of the two closest solar twins previously known. [Jorge Meléndez and Iván Ramírez, “HIP 56948: A Solar Twin with a Low Lithium Abundance,” *Astrophysical Journal Letters* 669 (November 10, 2007): L89-L92.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1962-1968). Baker Publishing Group. Kindle Edition.]
- However, HIP 56948 is 1.2 billion years older and 15 percent more luminous than the Sun. As long as a star has hydrogen to burn in its core, it continues growing brighter as it ages. Such brightening happens as nuclear burning fuses hydrogen into helium. The added helium increases the star’s core density. This increased density then causes nuclear fusion to proceed with greater efficiency. A higher luminosity is consistent with the age difference between the two stars. The greater age and increased luminosity of HIP 56948 interfere with its potential to support an advanced-life-carrying planet. If Earth’s Sun shone brighter by just 0.4 percent (as it will when it’s only 0.2 percent older), advanced life would become extinct. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1973-1978). Baker Publishing Group. Kindle Edition.]
- For advanced life to be possible on any planet, it must be accompanied by a just-right suite of gas giants. These planets act as gravitational shields. Their

large masses either absorb or deflect asteroids and comets that would otherwise collide with the life-support planet. No single gas giant planet can provide adequate protection. It takes several to adequately cover all possible incoming collision routes. For this shielding to be effective, the gas giant planets must orbit neither too near nor too far from the life-support planet. In addition, a gas giant must not orbit so closely that its gravity disturbs the life-support planet's orbit. Furthermore, to avoid disturbing that orbit, the inclination (tilt relative to the planetary system's plane) and eccentricity (degree of ellipticity) of the gas giant planets must be nearly zero. If the masses of the gas giants are too great, their gravitational pull on the life-support planet will disrupt its orbit. However, if the masses are too small, the gas giant will neither deflect nor absorb sufficient numbers of incoming asteroids and comets. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 1995-2003). Baker Publishing Group. Kindle Edition.]

- To date, there are 304 known extrasolar planetary systems. Of them, 303 contain a gas giant planet that either orbits its star closely (less than 3.5 times Earth's orbital distance from the Sun) or possesses a large orbital eccentricity.¹⁰ Planets with these characteristics won't even permit a water-rich planet the size of Earth to form in their vicinity.¹¹ So far, only one "Jupiter twin" has been discovered, HD 154345b.¹² This so-called twin of Jupiter orbits its star 20 percent closer than Jupiter does the Sun. It also lacks gas giant partners. Furthermore, its star is not even close to being a twin of the Sun. No advanced-life habitable planet is possible in the HD 154345 system. [10. Jean Schneider, "Interactive Extra-solar Planets Catalog," The Extrasolar Planets Encyclopedia, <http://exoplanet.eu/catalog-all.php> (accessed May 31, 2008). 11. Sean N. Raymond, "The Search for Other Earths: Limits on the Giant Planet Orbits That Allow Habitable Terrestrial Planets to Form," *Astrophysical Journal Letters* 643 (June 1, 2006): L131–L134. 12. J. T. Wright et al., "The Jupiter Twin HD154345b," *Astrophysical Journal Letters* 683 (August 10, 2008): L63–L66.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2031-2036). Baker Publishing Group. Kindle Edition.]

9 Putting RTB's Model For Life's Beginning and Extraterrestrial Homes To

The Test

- The atmosphere a planet accumulates during formation depends primarily on two factors: the planet's gravitational pull and the distance from its star. The greater the pull and distance, the thicker the atmosphere, and the more powerful the planet's capability to retain light-molecular-weight molecules long-term. These conditions pose a serious challenge. For advanced life to be possible, abundant water vapor must be retained for several billion years. However, the high gravity and low temperature necessary for such retention would result in an atmosphere far too thick for life, much thicker than that of Venus. For Earth to possibly support advanced life, something had to blow away about 99 percent of this primordial atmosphere. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2135-2140). Baker Publishing Group. Kindle Edition.]
- According to detailed computer modeling developed in 2004, when primordial Earth was only 30 to 50 million years old, a Mars-sized planet smashed into Earth at a 45-degree angle. This planet's speed upon impact was surprisingly slow (less than 4 kilometers per second).² The collision:
 - ejected Earth's thick, life-suffocating atmosphere. Some material eventually returned, forming a new atmosphere—one with the perfect air pressure for efficient lung performance, the ideal heat-trapping capability, and the just-right transparency for efficient photosynthesis.
 - supplied the optimal chemical composition so the new atmosphere could be further transformed by simple life-forms into the appropriate composition to sustain advanced life.
 - augmented Earth's mass and density enough to allow the atmosphere to retain a large, but not too large, quantity of water vapor for billions of years.
 - raised the amount of iron in Earth's core close to the level necessary for a strong, enduring magnetic field (the remainder came from a later collision event—see pp. 138–40). This magnetic field shields life from deadly cosmic rays and solar X-rays.
 - delivered just-right quantities of iron and other critical elements to Earth's core and mantle. These produced sufficiently long-lasting, continent-building plate tectonics at just-right levels. Finely tuned plate tectonics perform a crucial role in compensating for the Sun's increasing brightness.
 - increased the iron content of Earth's crust, permitting a huge abundance of ocean life that can support advanced

life.³ • salted Earth’s interior with an abundance of long-lasting radio-isotopes, the heat from which drives most of Earth’s tectonic activity and volcanism.⁴ • gradually slowed Earth’s rotation to a rate that eventually permitted advanced life to thrive. • stabilized Earth’s rotation axis tilt, protecting the planet from rapid and extreme climatic variations.⁵ • formed Earth’s moon. [2. Robin M. Canup, “Simulations of a Late Lunar-Forming Impact,” *Icarus* 168 (April 2004): 433–56; Herbert Palme, “The Giant Impact Formation of the Moon,” *Science* 304 (May 14, 2004): 977–79. 3. Louis A. Codispoti, “The Limits to Growth,” *Nature* 387 (May 15, 1997): 237; Kenneth H. Coale et al., “A Massive Phytoplankton Bloom Induced by an Ecosystem-Scale Iron Fertilization Experiment in the Equatorial Pacific Ocean,” *Nature* 383 (October 10, 1996): 495–99. 4. Peter D. Ward and Donald Brownlee, *Rare Earth* (New York: Copernicus/Springer-Verlag, 2000), 191–234. 5. William R. Ward, “Comments on the Long-Term Stability of the Earth’s Obliquity,” *Icarus* 50 (May–June 1982): 444–48; Carl D. Murray, “Seasoned Travellers,” *Nature* 361 (February 18, 1993): 586–87; Jacques Laskar and P. Robutel, “The Chaotic Obliquity of the Planets,” *Nature* 361 (February 18, 1993): 608–12; Jacques Laskar, F. Joutel, and P. Robutel, “Stabilization of the Earth’s Obliquity by the Moon,” *Nature* 361 (February 18, 1993): 615–17.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2140-2159). Baker Publishing Group. Kindle Edition.]

- Such an extraordinarily enormous mass ratio suggests purposeful design, especially when combined with several other extremely fine-tuned lunar features. [For a partial list, see Neil F. Comins, *What If the Moon Didn’t Exist?* (New York: HarperCollins, 1993).] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2163-2164). Baker Publishing Group. Kindle Edition.]
- Astronomers have calculated that between 3.9 and 3.8 billion years ago, the Late Heavy Bombardment pummeled Earth with roughly 17,000 collisions.¹¹ These collisions deposited a total of 400,000 pounds of extraterrestrial material per square yard (220,000 kilograms per meter squared) over the entire surface of Earth.¹² [11. Stephen J. Mojzsis, “Lithosphere-Hydrosphere Interactions on the Hadean (>4.0 Ga) Earth,” *Astrobiology* 1 (September 2001): 383; Stephen J. Mojzsis and Graham

Ryder, “Accretion to Earth and Moon ~3.85 Ga,” in *Accretion of Extraterrestrial Matter throughout Earth’s History*, ed. Bernhard Peuckner-Ehrenbrink and Birger Schmitz (New York: Kluwer Academic/Plenum Publishers, 2001), 423–26; Stephen J. Mojzsis and T. Mark Harrison, “Establishment of a 3.83-Ga Magmatic Age for the Akilia Tonalite (Southern West Greenland),” *Earth and Planetary Science Letters* 202 (September 2002): 563–76; Ronny Schoenberg et al., “Tungsten Isotope Evidence from ~3.8-Gyr Metamorphosed Sediments for Early Meteorite Bombardment of the Earth,” *Nature* 418 (July 25, 2002): 403. 12. Ariel D. Anbar et al., “Extraterrestrial Iridium, Sediment Accumulation and the Habitability of the Early Earth’s Surface,” *Journal of Geophysical Research* 106 (February 25, 2001): 3219–36; Schoenberg et al., “Tungsten Isotope Evidence,” 403–5.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2205-2207). Baker Publishing Group. Kindle Edition.]

- From a naturalistic perspective, the origin of life required a site where amino acids (building blocks of proteins) and nucleotides (building blocks of DNA and RNA) could be efficiently concentrated and assembled. One problem, however, is that both oxygen and ultraviolet radiation are toxic to this prebiotic chemistry. They powerfully shut down any possible synthesis of amino acids and nucleotides. This oxygen-ultraviolet paradox explains why Earth contains no record of any prebiotics. The presence of oxygen halts prebiotic chemistry, whereas the lack of oxygen means no ozone shield could form in Earth’s atmosphere to prevent the penetration of ultraviolet radiation from the Sun. A few astronomers have speculated that perhaps some regions within dense interstellar molecular clouds might lack both oxygen and ultraviolet radiation and, thus, might conceivably permit prebiotics to form. However, no amino acids, nucleotides, or even the pentose sugars and nitrogenous bases that make up parts of the nucleotides have been found there. Repeated claims for the detection of the simplest amino acid (glycine)¹⁶ have proved false, as have claims for the detection of the simplest nitrogenous base (pyrimidine).¹⁷ [16. L. E. Snyder et al., “A Rigorous Attempt to Verify Interstellar Glycine,” *Astrophysical Journal* 619 (February 1, 2005): 914–30. 17. Yi-Jehng Kuan et al., “A Search for Interstellar Pyrimidine,” *Monthly Notices of the Royal Astronomical Society* 345

(October 10, 2003): 650–56.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2229-2238). Baker Publishing Group. Kindle Edition.]

- No known natural mechanism exists on Earth, past or present, for generating this homochirality.²³ While some individual mineral crystals produce limited right- or left-handed enrichment (at best, about 10 percent), any natural ensemble of mineral crystals contains roughly the same number of crystals favoring production of left-handed configurations as it does those favoring right.²⁴ Even under highly complex and carefully controlled laboratory conditions roughly simulating a realistic natural environment, chemists have struggled to produce homochiral amino acids. Only experiments exploiting 100 percent circularly polarized ultraviolet (UV) light have led to positive results. But even then, only a 20 percent excess of left-handed amino acids could be generated.²⁵ The cost, however, was the destruction of nearly all the original amino acids. For every 2 percent excess generated, half or more of the amino acids in the original mixture were destroyed.²⁶ [23. Jon Cohen, “Getting All Turned Around Over the Origins of Life on Earth,” *Science* 267 (March 3, 1995): 1265. In this article Cohen quotes one of the leading origin-of-life researchers, William Bonner. In February 1995, during the “Physical Origin of Homochirality in Life” conference held in Santa Monica, California, Bonner stated to the assembled scientists, “I spent twenty-five years looking for terrestrial mechanisms for homochirality and trying to investigate them and didn’t find any supporting evidence. Terrestrial explanations are impotent or nonviable.” 24. Robert M. Hazen, “Life’s Rocky Start,” *Scientific American* 284 (April 2001): 77–85. 25. G. Balavoine, A. Moradpour, and H. B. Kagan, “Preparation of Chiral Compounds with High Optical Purity by Irradiation with Circularly Polarized Light: A Model Reaction for the Prebiotic Generation of Optical Activity,” *Journal of the American Chemical Society* 96 (August 7, 1974): 5152–58. 26. Jose J. Flores, William A. Bonner, and Gail A. Massey, “Asymmetric Photolysis of (RS)-Leucine with Circularly Polarized Ultraviolet Light,” *Journal of the American Chemical Society* 99 (May 25, 1977): 3622–25.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2255-2262). Baker Publishing Group. Kindle Edition.]

10 Putting RTB's Creation Model For Life's History To The Test

- The stability and efficiency of Earth's dynamo depends on the exact regulation of at least seven major geophysical features: 1. Relative abundances of silicon, iron, and sulfur in Earth's solid inner core 2. Viscosities at the boundaries between this solid inner core and the liquid outer core and between the liquid outer core and the mantle 3. Ratio of Earth's inner core to outer core radii 4. Ratio of the inner core to outer core magnetic diffusivity (measure of how well a magnetic field diffuses throughout a conducting medium) 5. Magnetic Reynolds number (a measure of viscous flow behavior) for the outer core 6. Gravitational torques from the Sun and Moon 7. Earth's core precession frequency [Jihad Touma and Jack Wisdom, "Nonlinear Core-Mantle Coupling," *Astronomical Journal* 122 (August 2001): 1030–50; Gerald Schubert and Keke Zhang, "Effects of an Electrically Conducting Inner Core on Planetary and Stellar Dynamos," *Astrophysical Journal* 557 (August 20, 2001): 930–42; M. H. Acuña et al., "Magnetic Field and Plasma Observations at Mars: Initial Results of the Mars Global Surveyor Mission," *Science* 279 (March 13, 1998): 1676–80; Peter Olson, "Probing Earth's Dynamo," *Nature* 389 (September 25, 1997): 337; Weijia Kuang and Jeremy Bloxham, "An Earth-Like Numerical Dynamo Model," *Nature* 389 (September 25, 1997): 371–74; Xiaodong Song and Paul G. Richards, "Seismological Evidence for Differential Rotation of the Earth's Inner Core," *Nature* 382 (July 18, 1996): 221–24; Wei-jia Su, Adam M. Dziewonski, and Raymond Jeanloz, "Planet Within a Planet: Rotation of the Inner Core of the Earth," *Science* 274 (December 13, 1996): 1883–87.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2456-2464). Baker Publishing Group. Kindle Edition.]
- Then two explosive events marked the appearance of complex multi-cellular life. The first, the Avalon explosion, occurred 575 million years ago.¹⁸ This event brought about the Ediacara life-forms, which included a variety of sponges and jellyfish. All the basic body plans or phyla for the Ediacara were fully present. No new phyla appeared during the subsequent 32 million years. Toward the end of that time, however, the Ediacara experienced a serious decline. [Bing Shen et al., "The Avalon Explosion: Evolution of Ediacara

Morphospace,” *Science* 319 (January 4, 2008): 81–84.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2581-2585). Baker Publishing Group. Kindle Edition.]

- Following the Ediacarian decline, a second, much more dramatic outburst of complex life-forms occurred 543 million years ago. In a time window narrower than 2 to 3 million years (possibly much briefer), during the Cambrian explosion, some forty or more phyla of complex animals appeared (none related to the Ediacara), including at least twenty-four of the thirty animal phyla that remain on Earth today. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2585-2588). Baker Publishing Group. Kindle Edition.]
- Every species races an evolutionary clock. Certain characteristics of a particular species determine its odds of winning: • population size • average body size • average generation span (time between birth and the capacity to give birth) • abundance, variety, longevity, and stability of food sources • average number of progeny per adult • level and duration of parental care and training required for independence • complexity of morphology • complexity of biochemistry • protein-to-body-mass ratio • metabolic rate • hibernation and aestivation (summer dormancy or torpor) level • average life span • habitat size • ecological diversity of habitat • complexity of social structures • complexity of symbiotic relationships with other species [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2635-2647). Baker Publishing Group. Kindle Edition.]
- My colleague biochemist Fazale Rana offers over a hundred examples of design convergence at the molecular level.²⁷ Paleontologist Simon Conway Morris, in his book *Life’s Solution*, described dozens more at the organismal level.²⁸ [27. Fazale Rana, *The Cell’s Design* (Grand Rapids: Baker, 2008), 205–15. 28. Simon Conway Morris, *Life’s Solution* (Cambridge, UK: Cambridge University Press, 2004).] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2693-2695). Baker Publishing Group. Kindle Edition.]
- This concept of historical contingency is the theme of paleontologist Stephen Jay Gould’s book *Wonderful Life: No finale can be specified at the start, none would ever occur a second time in the same way, because any pathway*

proceeds through thousands of improbable stages. Alter any early event, ever so slightly, and without apparent importance at the time, and evolution cascades into a radically different channel. [Stephen Jay Gould, *Wonderful Life* (New York: W. W. Norton, 1989), 51.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2698-2702). Baker Publishing Group. Kindle Edition.]

- Life influences the amount of heat and light Earth’s surface reflects into outer space.³³ That amount determines whether Earth remains inhabitable or experiences a runaway freeze-up or a runaway boil-off. The kinds and quantities of life on Earth’s continental landmasses impact the cycling of silica, a substance that buffers soil acidification, regulates atmospheric carbon dioxide, and provides an important nutrient for both marine and terrestrial life-forms.³⁴ [33. Neville J. Woolf, “What Is an Earth-Like Planet?” Abstract #926, Abstracts of the Biennial Meeting of the NASA Astrobiology Institute, April 10–14, 2005, *Astrobiology* 5 (April 2005): 200. 34. Isabelle Basile-Doelsch, Jean Dominique Meunier, and Claude Parron, “Another Continental Pool in the Terrestrial Silicon Cycle,” *Nature* 433 (January 27, 2005): 399–402; Philip W. Boyd et al., “The Decline and Fate of an Iron-Induced Subarctic Phytoplankton Bloom,” *Nature* 428 (April 1, 2004): 549–53.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2745-2749). Baker Publishing Group. Kindle Edition.]

11 Putting RTB’s Creation Model For Advanced Life To The Test

- The perfectly timed appearances of the first and progressively more advanced vascular plants testifies of careful planning and design for the benefit of all life—most especially for birds, mammals, and humans. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2790-2791). Baker Publishing Group. Kindle Edition.]
- Most of Earth’s species can be explained in purely physical terms. But birds and mammals are different. In addition to their physical features, they manifest the capacity to express emotions and form lifelong nurturing relationships. These animals exhibit a freedom to choose apart from instinct. They possess a mind capable of exploring new experiences and solving problems. Such creatures bond with members of their own species and can

form relationships with members of other bird and mammal species. Most especially, soulful animals can form emotional attachments with humans. Typically creation/evolution discussions largely ignore the issue of how soulfulness originated. When pressed, naturalists and most theistic evolutionists insist that physical explanations exist for every soulful attribute. Yet they cannot describe where these soulful attributes came from. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2792-2799). Baker Publishing Group. Kindle Edition.]

- A study of four thousand land mammal species spanning a body-mass range from 2 grams to 4,000 kilograms showed that the potential of extinction risk against six established predictors (environmental and species intrinsic traits) becomes greater with increasing body mass.⁵ In particular, a sharp increase in extinction risk occurs at a body mass of three kilograms. Above this size “extinction risk begins to be compounded by the cumulative effects of multiple threatening factors.”⁶ An independent study established a much greater accumulation of deleterious mutations for large body-sized mammals.⁷ The two studies combined establish that land mammals with large body sizes possess extinction rates much higher than those for smaller animals. Meanwhile, molecular studies demonstrate that larger animals with their lower metabolic rates and longer generation times have much slower rates of evolution.⁸ The bottom line is that large-bodied land mammals experience extinction rates far higher than the most optimistic naturalistic speciation rates. Consequently, large body-sized mammals cannot be the product of natural process or theistic evolution. Such high-extinction rates and slow-evolution rates also falsify young-earth creationism with its appeal to the rapid evolution of large-bodied animals after Adam’s sin and the flood.⁹ [5. Marcel Cardillo et al., “Multiple Causes of High Extinction Risk in Large Mammal Species,” *Science* 309 (August 19, 2005): 1239–41. 6. *Ibid.*, 1240. 7. Konstantin Popadin et al., “Accumulation of Slightly Deleterious Mutations in Mitochondrial Protein-Coding Genes of Large Versus Small Mammals,” *Proceedings of the National Academy of Sciences, USA* 104 (August 6, 2007): 13390–95. 8. A. P. Martin and S. R. Palumbi, “Body Size, Metabolic-Rate, Generation Time, and the Molecular Clock,” *Proceedings of the National Academy of Sciences, USA* 90 (May 1, 1993):

4087–91; James F. Gillooly et al., “The Rate of DNA Evolution: Effects of Body Size and Temperature on the Molecular Clock,” *Proceedings of the National Academy of Sciences, USA* 102 (January 4, 2005): 140–45. 9. For an explanation and documentation see my book *A Matter of Days* (Colorado Springs: NavPress, 2004), 121–29.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2807-2817). Baker Publishing Group. Kindle Edition.]

- All bird and mammal species predate humans. Yet many of them appear specifically designed to either benefit the needs of humanity or bring people pleasure. Furthermore, each of these species appears designed in distinctly different ways to carry out these purposes. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2822-2823). Baker Publishing Group. Kindle Edition.]
- Herbivores are mammals that sustain humanity’s agricultural enterprises. The first such beasts domesticated on a large scale were goats.¹⁰ It’s easy to see why. Even goats that have never seen a human will readily approach and follow one. They can eat almost anything and thrive in virtually all climate conditions. These mammals provide their owners with a wide range of agricultural products for very little cost. Goats seem perfectly designed to catapult the first humans into animal husbandry. Besides goats, many other bird and mammal species seem much better designed to meet humanity’s needs than even their own. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2834-2839). Baker Publishing Group. Kindle Edition.]
- The wide variety of ways in which birds and mammals express their soulish characteristics presents problems for any naturalist and most theistic evolutionary models. For such models to have credibility, bird and mammal species that are physically similar to one another should also be soulishly similar. The following example is only one of many that challenge this premise. Donkeys, horses, and zebras are physically so similar that humans have easily crossbred them to make mules, zorses, and zebrasses. Their soulish characteristics, however, are markedly different. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2844-2848). Baker Publishing Group. Kindle Edition.]

- Horses can form strong emotional bonds with their human owners. They will forgive cruelty. If treated well, they'll sacrifice their own needs and even their lives to protect their owners. Loyalty to their human owners can be so strong that they will charge into battle with them. Donkeys are extremely adaptable. Like horses, they can form a lifelong emotional bond with a human. However, if a human loses his donkey, the donkey can take care of itself under almost any circumstances. It easily transitions from domestication to living in the wild and from living in the wild back to domestication. Unlike the horse, the donkey hates danger and provides useful service in warning its human owner of impending risks. Zebras are much more difficult to domesticate, harness, and ride than either horses or donkeys. However, they are more alert to imminent danger and much hardier. In the wild, zebras form dense herds providing human hunters an easy, productive source of food and leather. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2849-2856). Baker Publishing Group. Kindle Edition.]

12 Putting RTB's Creation Model For The Origin And History Of Humanity To The Test

- Nontheistic models adhere to a central premise that humans arose by strictly natural unguided steps from a bacterial life-form that sprang into being 3.8 billion years ago. Famed evolutionary biologist Francisco Ayala, an advocate for the hypothesis that natural selection and mutations can efficiently generate distinctly different species, nevertheless calculated the probability that humans (or a similarly intelligent species) arose from single-celled organisms as a possibility so small ($10^{-1,000,000}$) that it might as well be zero (roughly equivalent to the likelihood of winning the California lottery 150,000 consecutive times with the purchase of just one ticket each time).² He and other evolutionary biologists agree that natural selection and mutations could have yielded any of a virtually infinite number of other outcomes. [Quoted by Frank J. Tipler in "Intelligent Life in Cosmology," *International Journal of Astrobiology* 2 (2003): 142.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2898-2904). Baker Publishing Group. Kindle Edition.]
- Astrophysicists Brandon Carter, John Barrow, and Frank Tipler produced an

even smaller probability. Not only does the presumed natural evolution of an intelligent species necessitate a stunningly large number of improbable biological events, it also demands unlikely changes in the physics, geology, and chemistry of Earth and the solar system. For a species as technically capable as humans to arise from a suite of bacterial species in ten billion years or less, the probability was determined at $10^{-24,000,000}$.³ For comparison, the probability of randomly picking a single marked proton out of all the protons in the observable universe is 10^{-79} . [Brandon Carter, “The Anthropic Principle and Its Implications for Biological Evolution,” *Philosophical Transactions of the Royal Society A* 310 (December 20, 1983): 347–60; John D. Barrow and Frank J. Tipler, *The Anthropic Cosmological Principle* (New York: Oxford University Press, 1986), 510–73.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2904-2909). Baker Publishing Group. Kindle Edition.]

- The origin of humanity is a critical distinguishing factor for creation/evolution models. Findings that prove humans emerged naturally from previously existing species in various regions rather than from one couple living in one region within the last 100,000 years would certainly deal RTB’s biblical model a severe blow. The model could also be falsified if researchers decisively demonstrated that humans possess no unique characteristics unaccounted for by superior intelligence alone. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2913-2916). Baker Publishing Group. Kindle Edition.]
- Geneticists have recovered mtDNA from humans dating as far back as 25,000 years.⁵ The range of diversity for human mtDNA does not overlap Neanderthal in any way. This observation, coupled with marked differences in their mtDNA, establishes beyond a reasonable doubt that Neanderthals made no contribution to the human gene pool. They have been eliminated as a possible ancestor. Dates for *Homo erectus* range from 1.8 to 0.5 million years ago, with some evidence suggesting dates as recent as 100,000 years ago. Given the rate of DNA decay, these dates leave little hope of recovering *Homo erectus* DNA pristine enough for meaningful comparisons with either Neanderthals or humans. Nevertheless, *Homo erectus* fossils are sufficiently abundant for testing this hominid’s role, if any, in humanity’s lineage. [David Caramelli et al., “Evidence for a Genetic Discontinuity between Neander-tals

and 24,000-Year-Old Anatomically Modern Europeans,” Proceedings of the National Academy of Sciences, USA 100 (May 27, 2003): 6593–97; Oliva Handt et al., “Molecular Genetic Analyses of the Tyrolean Ice Man,” Science 264 (June 17, 1994): 1775–78; Giulietta Di Benedetto et al., “Mitochondrial DNA Sequences in Prehistoric Human Remains from the Alps,” European Journal of Human Genetics 8 (September 2000): 669–77.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2932-2938). Baker Publishing Group. Kindle Edition.]

- A discovery that the most ancient fossils for Homo erectus are indistinguishable from the most recent shows that Homo erectus remained static, experiencing no more significant change with respect to time than either Neanderthals or humans. Because Homo erectus manifests morphological features radically different from either humans or Neanderthals and because all three species experienced no observable evolutionary change, it is highly unlikely that Homo erectus was the ancestor of Neanderthals, archaic Homo sapiens, or modern humans. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2940-2943). Baker Publishing Group. Kindle Edition.]
- Mitochondrial DNA also allows scientists to investigate the originators of the human race, where they came from, and approximately when. This mtDNA evidence establishes that humans descended from one woman (or a very few women) in a single location.⁸ Likewise, Y-chromosomal evidence confirms that humanity descended from one man (or a very few men) from the same location.⁹ With obvious biblical overtones, geneticists refer to humanity’s mtDNA ancestor as mitochondrial Eve, and to the Y-chromosome ancestor as Y-chromosomal Adam. Scientists call the location where they originated the Garden of Eden. [8. Linda Vigilant et al., “African Populations and the Evolution of Human Mitochondrial DNA,” Science 253 (September 27, 1991): 1503–7; Margellen Ruvolo et al., “Mitochondrial COII Sequence and Modern Human Origins,” Molecular Biology and Evolution 10 (November 1993): 1115–35; Stephen T. Sherry et al., “Mismatch Distributions of mtDNA Reveal Recent Human Population Expansions,” Human Biology 66 (October 1994): 761–75; Satoshi Horai et al., “Recent African Origin of Modern Humans Revealed by Complete Sequences of Hominoid Mitochondrial DNAs,” Proceedings of the National Academy of Sciences,

USA 92 (January 17, 1995): 532–36; Masami Hasegawa and Satoshi Horai, “Time of the Deepest Root for Polymorphism in Human Mitochondrial DNA,” *Journal of Molecular Evolution* 32 (January 1991): 37–42; Mark Stoneking et al., “New Approaches to Dating Suggest a Recent Age for the Human mtDNA Ancestor,” *Philosophical Transactions of the Royal Society of London B* 337 (August 29, 1992): 167–75; Max Ingman et al., “Mitochondrial Genome Variation and the Origin of Modern Humans,” *Nature* 408 (December 7, 2000): 708–13; S. Blair Hedges, “A Start for Population Genomics,” *Nature* 408 (December 7, 2000): 652–53; Ann Gibbons, “Calibrating the Mitochondrial Clock,” *Science* 279 (January 2, 1998): 28–29. For a thorough review of the genetic origins of human beings see Rana with Ross, *Who Was Adam?* 9. L. Simon Whitfield, John E. Sulston, and Peter N. Goodfellow, “Sequence Variation of the Human Y Chromosome,” *Nature* 378 (November 23, 1995): 379–80; Jonathan K. Pritchard et al., “Population Growth of Human Y Chromosomes: A Study of Y Chromosome Microsatellites,” *Molecular Biology and Evolution* 16 (December 1999): 1791–98; Russell Thomson et al., “Recent Common Ancestry of Human Y Chromosomes: Evidence from DNA Sequence Data,” *Proceedings of the National Academy of Sciences, USA* 97 (June 20, 2000): 7360–65; Peter A. Underhill et al., “Y Chromosome Sequence Variation and the History of Human Populations,” *Nature Genetics* 26 (November 2000): 358–61; Ann Gibbons, “Y Chromosome Shows That Adam Was an African,” *Science* 278 (October 31, 1997): 804–5; Mark Seielstad et al., “A View of Modern Human Origins from Y Chromosome Microsatellite Variation,” *Genome Research* 9 (June 1999): 558–67; Ornelia Semino et al., “Ethiopians and Khoisan Share the Deepest Clades of the Human Y Chromosome Phylogeny,” *American Journal of Human Genetics* 70 (January 1, 2002): 265–68. For a thorough review of the genetic origins of human beings see Rana with Ross, *Who Was Adam?* [Hugh Ross: ***More Than a Theory (Revealing a Testable Model for Creation)*** (Kindle Locations 2955-2959). Baker Publishing Group. Kindle Edition.]

- According to the analysis this location is in eastern Africa, not Mesopotamia, the traditional biblical site. Both locations, however, are questionable. The Bible mentions four rivers coming out of Eden: the Pishon, Gihon, Tigris, and Euphrates (see Gen. 2:10–14). The Pishon is said to flow through

Havilah, the Gihon through Cush, and the Tigris through eastern Asshur. Most scholars identify Havilah as central Arabia, Cush as eastern Africa, and Asshur as Mesopotamia. Geologist Ward Sanford has identified two ancient riverbeds that flow into the southern part of the Persian Gulf near the border between Qatar and the United Arab Emirates.¹⁰ One riverbed extends into central Arabia, the other into its southernmost tip. [Ward E. Sanford, “Thoughts on Eden, the Flood, and the Persian Gulf,” *The News! Newsletter for the Affiliation of Christian Geologists* 7, Number 1 (Spring 1999).] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2960-2965). Baker Publishing Group. Kindle Edition.]

- The mtDNA and Y-chromosome identification of the east African site is based on the observation that the people living there manifested the greatest genetic diversity of all humanity’s ethnic groups and on the assumption that human migration and mating was random. These practices, however, were far from haphazard. Both the Bible (see Gen. 10:1–11:9) and archaeological evidence testify to the early rapid migration of humanity from a single location to many distant lands.¹¹ Then people ceased migrating and settled in their chosen destinations. [Vincent Macaulay et al., “Single, Rapid Coastal Settlement of Asia Revealed by Analysis of Complete Mitochondrial Genomes,” *Science* 308 (May 15, 2005): 1034–36.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2969-2973). Baker Publishing Group. Kindle Edition.]
- New research, however, indicates that the widely advertised 98 to 99 percent similarity between chimpanzee and human DNA is greatly exaggerated. Such claims were based on small segments of the human and chimpanzee genomes where common sense dictates that similarities would be the greatest. While comparisons between the complete human and chimpanzee genomes have yet to be done, the most complete analyses performed so far show that the similarity is closer to 85 to 90 percent. [Tatsuya Anzai et al., “Comparative Sequencing of Human and Chimpanzee MHC Class I Regions Unveils Insertions/Deletions as the Major Path to Genomic Divergence,” *Proceedings of the National Academy of Sciences, USA* 100 (June 24, 2003): 7708–13; J. W. Thomas et al., “Comparative Analyses of Multi-Species Sequences from Targeted Genomic Regions,” *Nature* 424 (August 14, 2003): 788–93; Ulfur Arnason, Xiufung Xu, and Anette Gullberg, “Comparison

between the Complete Mitochondrial DNA Sequences of Homo and the Common Chimpanzee Based on Nonchimeric Sequences,” *Journal of Molecular Evolution* 42 (February 1996): 145–52; The International Chimpanzee Chromosome 22 Consortium, “DNA Sequence and Comparative Analysis of Chimpanzee Chromosome 22,” *Nature* 429 (May 27, 2004): 382–88; Jean Weissenbach, “Genome Sequencing: Differences with the Relatives,” *Nature* 429 (May 27, 2004): 353–55.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2985-2988). Baker Publishing Group. Kindle Edition.]

- DNA date. Geneticists have calculated the date for the first Y-chromosomal man between 42,000 to 60,000 years ago.¹⁴ For the first mtDNA woman, the date reflects a much wider error bar, 170,000 ± 50,000 years ago.¹⁵ This mtDNA date assumes universal homoplasmy (that all humans possess only one set of mtDNA). However, studies show that 10 to 20 percent of the human population possesses two sets of mtDNA (heteroplasmy), and nearly 1 percent has three sets (triplasmy).¹⁶ Calculations based on these new findings place the date for the first mtDNA woman closer to 50,000 years ago, in line with the Y-chromosome date.¹⁷ It also corresponds with the biblical date for Adam and Eve’s creation based on reasonable calibration of the Genesis genealogies.¹⁸ The dates for the explosive emergence of advanced art, advanced tools, complex language, clothing, and jewelry corroborate this timing. [14. Pritchard et al., “Population Growth,” 1791–98; Thomson et al., “Recent Common Ancestry,” 7360–65; Underhill et al., “Y Chromosome Sequence Variation,” 358–61; Whitfield, Sulston, and Goodfellow, “Sequence Variation,” 379–80. 15. Ingman et al., “Mitochondrial Genome Variation,” 708–13; Hedges, “Start for Population Genomics,” 652–53. 16. Lois A. Tully et al., “A Sensitive Denaturing Gradient-Gel Electrophoresis Assay Reveals a High Frequency of Heteroplasmy in Hypervariable Region 1 of the Human mtDNA Control Region,” *American Journal of Human Genetics* 67 (August 2000): 432–43; Gibbons, “Calibrating the Mitochondrial Clock,” 28–29. 17. Gibbons, “Calibrating the Mitochondrial Clock,” 28–29; Hugh Ross and Sam Conner, “Eve’s Secret to Growing Younger,” *Facts & Faith*, first quarter 1998, 1–2. 18. Rana with Ross, *Who Was Adam?* 46–47.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 2998-

3006). Baker Publishing Group. Kindle Edition.]

- Why Did God Create Hominids? From a biblical perspective, God possesses complete knowledge of the future. He knew before creating any hominids that future humans would rebel against his authority and become selfish and dangerously harmful to each other and the environment. The many bird and mammal species driven to extinction sadly testifies to such abuse. Of the 15,000 to 20,000 bird species present at the time of humanity's origin, only about 9,000 remain. Of approximately 8,000 land mammal species, only about 4,000 are left.¹⁹ Humans have devastated the very creatures God supplied to improve humanity's quality of life. Perhaps this impact would have been even worse had God not created a series of progressively more advanced hominids. [19. Gary K. Meffe, C. Ronald Carroll, and contributors, *Principles of Conservation Biology*, 2nd ed. (Sunderland, MA: Sinauer Associates, 1997), 87–156; John Alroy, "A Multispecies Overkill Simulation of the End-Pleistocene Megafaunal Mass Extinction," *Science* 292 (June 8, 2001): 1893–96; Richard G. Roberts et al., "New Ages for the Last Australian Megafauna: Continent-Wide Extinction About 46,000 Years Ago," *Science* 292 (June 8, 2001): 1888–92; Paul R. and Anne H. Ehrlich, *Extinction* (New York: Ballantine Books, 1981), 20–21; Jeffrey K. McKee et al., "Forecasting Global Biodiversity Threats Associated with Human Population Growth," *Biological Conservation* 115 (January 2004): 161–64; Leigh Dayton, "Mass Extinctions Pinned on Ice Age Hunters," *Science* 292 (June 8, 2001): 1819; Gerardo Ceballos and Paul R. Ehrlich, "Mammal Population Losses and the Extinction Crisis," *Science* 296 (May 3, 2002): 904–7; David W. Steadman, "Prehistoric Extinctions of Pacific Island Birds: Biodiversity Meets Zooarchaeology," *Science* 267 (February 24, 1995): 1123–31; "Human Impact on the Earth: Journey into New Worlds," *The Sacred Balance*, <http://www.sacredbalance.com/web/drilldown.html?sku=35> (accessed June 29, 2005).] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3013-3018). Baker Publishing Group. Kindle Edition.]

13 Putting RTB's Creation Model To The "Why" Question Test

- why would an all-loving, all-knowing, all-powerful Creator: • take ten billion

years to prepare the cosmos for life? • take more than four billion years to prepare Earth for human life? • fill the universe with so much empty space? • make the universe so predominantly dark? • make so many lifeless galaxies, stars, planets, and moons? • choose the physical laws that he did? • choose the cosmic space-time dimensions that he did? • endow the universe with so much decay? • cause humans to suffer so much? • grant humans such a very brief window of time in which they can exist? Other important questions have also refined and expanded RTB's creation model. These include, why would: • a loving Creator make carnivores, detritivores, and parasites? • an intelligent, supernatural Creator make "junk DNA"? • "bad designs" exist in nature? • a caring Creator expose all his creatures to so many destructive "acts of God" such as earthquakes, hurricanes, tornadoes, volcanic eruptions, floods, drought, and wildfires? [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3121-3134). Baker Publishing Group. Kindle Edition.]

- For decades this explanation satisfied curiosity. Many scientists considered junk DNA powerful evidence for naturalistic evolution.⁴ When identical segments of junk DNA appeared (often in the same genome location) in a set of species that from an evolutionary perspective are related to one another, evolutionists drew what they considered an obvious conclusion: respective junk DNA segments arose prior to these organisms' divergence from a shared ancestor.⁵ [4. Edward E. Max, "Plagiarized Errors and Molecular Genetics: Another Argument in the Evolution-Creation Controversy," The TalkOrigins Archive, <http://www.talkorigins.org/faqs/molgen> (accessed May 9, 2005). 5. Ibid.; Lodish et al., *Molecular Cell Biology*, 299–301, 303.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3205-3208). Baker Publishing Group. Kindle Edition.]
- After more than thirty years of referring to DNA that does not code for the manufacture of proteins as "junk," geneticists have discovered five kinds of nonprotein-coding DNA—pseudogenes, SINES, LINES, endogenous retroviruses, and LTRs—that perform life-critical functions. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3222-3224). Baker Publishing Group. Kindle Edition.]
- Pseudogenes got their name from the assumption that certain DNA segments

are the dead, useless remains of genes that many generations ago coded for proteins. Recent experiments, however, show that many pseudo-genes are not useless. When certain pseudogenes were turned off, the organism suffered either fatal or injurious consequences.⁸ Geneticists now realize that these pseudogenes somehow protected the protein-coding genes from breakdown or malfunction. Other pseudogenes were found to actually encode for functional proteins.⁹ Still other pseudogenes were misidentified and later discovered to encode for the construction of molecules once thought to serve no purpose.¹⁰ [8. Sergei A. Korneev, Ji-Ho Park, and Michael O’Shea, “Neuronal Expression of Neural Nitric Oxide Synthase (nNOS) Protein Is Suppressed by an Antisense RNA Transcribed from an NOS Pseudogene,” *Journal of Neuroscience* 19 (September 15, 1999): 7711–20; Shinji Hirotsune et al., “An Expressed Pseudogene Regulates the Messenger-RNA Stability of Its Homologous Coding Gene,” *Nature* 423 (May 1, 2003): 91–96; Jeannie T. Lee, “Complicity of Gene and Pseudogene,” *Nature* 423 (May 1, 2003): 26–28; Evgeniy S. Balakirev and Francisco J. Ayala, “Pseudogenes: Are They ‘Junk’ or Functional DNA?” *Annual Reviews of Genetics* 37 (December 2003): 123–51. 9. Esther Betrán et al., “Evolution of the Phosphoglycerate mutase Processed Gene in Human and Chimpanzee Revealing the Origin of a New Primate Gene,” *Molecular Biology and Evolution* 19 (May 2002): 654–63. 10. Christopher B. Marshall, Garth L. Fletcher, and Peter L. Davies, “Hyperactive Antifreeze Protein in a Fish,” *Nature* 429 (May 13, 2004): 153.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3225-3230). Baker Publishing Group. Kindle Edition.]

- SINES is an acronym for short-interspersed nuclear elements. Emerging research shows that these DNA elements serve at least two distinct purposes. Some help protect the cell when it experiences stress.¹¹ Others help regulate the expression of the protein-coding genes.¹² [11. Wen-Man Liu et al., “Cell Stress and Translational Inhibitors Transiently Increase the Abundance of Mammalian SINE Transcripts,” *Nucleic Acid Research* 23 (May 25, 1995): 1758–65; Tzu-Huey Li et al., “Physiological Stresses Increase Mouse Short Interspersed Element (SINE) RNA Expression in vivo,” *Gene* 239 (November 1, 1999): 367–72; Richard H. Kimura, Prabhakara V. Choudary, and Carl W. Schmid, “Silk Worm Bm1 SINE RNA Increases following

Cellular Insults,” *Nucleic Acids Research* 27 (August 15, 1999): 3380–87; Wen-Ming Chu et al., “Potential Alu Function: Regulation of the Activity of Double-Stranded RNA-Activated Kinase PKR,” *Molecular and Cellular Biology* 18 (January 1998): 58–68. 12. Wen-Man Liu et al., “Alu Transcripts: Cytoplasmic Localisation and Regulation by DNA Methylation,” *Nucleic Acid Research* 22 (March 25, 1994): 1087–95; Wen-Man Liu and Carl W. Schmid, “Proposed Roles for DNA Methylation in Alu Transcriptional Repression and Mutational Inactivation,” *Nucleic Acid Research* 21 (March 25, 1993): 1351–59; Carol M. Rubin et al., “Alu Repeated DNAs Are Differentially Methylated in Primate Germ Cells,” *Nucleic Acid Research* 22 (November 25, 1994): 5121–27; Igor N. Chesnokov and Carl W. Schmid, “Specific Alu Binding Protein from Human Sperm Chromatin Prevents DNA Methylation,” *Journal of Biological Chemistry* 270 (August 4, 1995): 18539–42; Utha Hellman-Blumberg et al., “Developmental Differences in Methylation of Human Alu Repeats,” *Molecular and Cellular Biology* 13 (August 1993): 4523–30.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3231-3233). Baker Publishing Group. Kindle Edition.]

- LINES is an acronym for long-interspersed nuclear elements. Recent findings show that some LINES play a central role in X-chromosome inactivation.¹³ When such inactivation fails, serious genetic disorders result.¹⁴ Another discovered LINES function is to turn off one of the two protein-coding genes inherited from an individual’s parents.¹⁵ [13. Jeffrey A. Bailey et al., “Molecular Evidence for a Relationship between LINE-1 Elements and X Chromosome Inactivation: The Lyon Repeat Hypothesis,” *Proceedings of the National Academy of Sciences, USA* 97 (June 6, 2000): 6634–39; Mary F. Lyon, “LINE-1 Elements and X Chromosome Inactivation: A Function for ‘Junk’ DNA?” *Proceedings of the National Academy of Sciences, USA* 97 (June 6, 2000): 6248–49. 14. Edith Heard, Philippe Clerc, and Philip Avner, “X-Chromosome Inactivation in Mammals,” *Annual Review of Genetics* 31 (December 1997): 571–610; Jack J. Pasternak, *An Introduction to Human Molecular Genetics: Mechanisms of Inherited Diseases* (Bethesda, MD: Fitzgerald Science Press, 1999), 31–32. 15. Elena Allen et al., “High Concentrations of Long Interspersed Nuclear Element Sequence Distinguish Monoallelically Expressed Genes,” *Proceedings of the National Academy of*

Sciences, USA 100 (August 19, 2003): 9940–45.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3234-3237). Baker Publishing Group. Kindle Edition.]

- Endogenous Retroviruses were once presumed by evolutionists to be the product of retroviral infections. Scientists hypothesized that retroviral DNA becomes incorporated into the host’s genome. New research, however, shows that many endogenous retroviruses protect the organism from retroviral infections by disrupting the life cycle of invading retroviruses.¹⁶ Others function as protein-coding genes.¹⁷ [16. Alan G. Atherly, Jack R. Girton, and John F. McDonald, *The Science of Genetics* (Fort Worth: Saunders College Publishing, 2000), 597–608; Greg Towers et al., “A Conserved Mechanism of Retrovirus Restriction in Mammals,” *Proceedings of the National Academy of Sciences, USA* 97 (October 24, 2000): 12295–99; Jonathan P. Stoye, “An Intracellular Block to Primate Lentivirus Replication,” *Proceedings of the National Academy of Sciences, USA* 99 (September 3, 2002): 11549–51; Theodora Hatzioannou et al., “Restriction of Multiple Divergent Retroviruses by Lv1 and Ref1,” *European Molecular Biology Organization Journal* 22 (February 3, 2003): 385–94. 17. François Mallet et al., “The Endogenous Retroviral Locus ERVWE1 Is a Bona Fide Gene Involved in Hominoid Placental Physiology,” *Proceedings of the National Academy of Sciences, USA* 101 (February 2, 2004): 1731–36.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3237-3240). Baker Publishing Group. Kindle Edition.]
- LTRs, an acronym for long-terminal repeats, were once thought to originate from endogenous retroviruses. Recent studies show that several LTRs play crucial roles in protecting organisms from retroviral attacks.¹⁸ Other research demonstrates that some LTRs help regulate the expression of certain protein-coding genes.¹⁹ [18. Clare Lynch and Michael Tristem, “A Co-opted Gypsy-Type LTR-Retrotransposon Is Conserved in the Genomes of Humans, Sheep, Mice, and Rats,” *Current Biology* 13 (September 2, 2003): 1518–23. 19. Wenhui Pi et al., “The LTR Enhancer of ERV-9 Human Endogenous Retrovirus Is Active in Oocytes and Progenitor Cells in Transgenic Zebrafish and Humans,” *Proceedings of the National Academy of Sciences, USA* 101 (January 20, 2004): 805–10; Catherine A. Dunn, Patrik

Medstrand, and Dixie L. Mager, “An Endogenous Retroviral Long Terminal Repeat Is the Dominant Promoter for Human β 1,3-Galactosyltransferase 5 in the Colon,” *Proceedings of the National Academy of Sciences, USA* 100 (October 8, 2003): 12841–46.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3241-3244). Baker Publishing Group. Kindle Edition.]

- The Panda’s “Clumsy” Thumb Perhaps the most famous examples of so-called “bad designs” in nature are those identified by Stephen Jay Gould in his book *The Panda’s Thumb*. Gould viewed the giant panda’s thumb as a clumsy contraption, an evolutionary adaptation of wrist bone material, not the work of a divine Designer. [Stephen Jay Gould, *The Panda’s Thumb* (New York: Norton, 1980), 24.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3250-3253). Baker Publishing Group. Kindle Edition.]
- While rebuttals to this argument have been published since the mid-1980s,²¹ a study reported in 1999 offers the most rigorous response. Six Japanese biologists used three-dimensional computed axial tomography and magnetic resonance imaging (CAT and MRI scans) to determine that “the radial sesamoid bone and accessory carpal bone form a double pincer-like apparatus in the medial and lateral sides of the hand, respectively, enabling the panda to manipulate objects with great dexterity.”²² In the close of their paper, the Japanese biologists concluded, “The hand of the giant panda has a much more refined grasping mechanism than has been suggested in previous morphological models.”²³ Their conclusions were confirmed by field observations of three pandas. Those studies showed the wrist flexion and manipulation of the double-pincer capacities are essential aspects of the panda’s specialized food gathering and feeding. [21. Peter Gordon, “The Panda’s Thumb Revisited: An Analysis of Two Arguments Against Design,” *Origins Research* 7 (Spring/Summer 1984): 12–14. 22. Hideki Endo et al., “Role of the Giant Panda’s ‘Pseudo-Thumb,’ ” *Nature* 397 (January 28, 1999): 309. 23. *Ibid.*, 310.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3253-3260). Baker Publishing Group. Kindle Edition.]
- Not too long ago, in the same way the removal of tonsils and adenoids was

common when I was a child, surgeons routinely removed the appendix during abdominal surgery. They presumed, as they were taught, that the appendix was a useless by-product of humanity's evolutionary history. These practices stopped with the discovery that the tonsils, adenoids, and appendix play important roles in the human immune system. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3261-3264). Baker Publishing Group. Kindle Edition.]

- Likewise, textbooks on anatomy once claimed that the “tailbone” at the base of the human spine was a useless residual of humanity's descent from long-tailed primates. As a result of research into the engineering dynamics of the human spine, anatomists now recognize that the human tailbone and in fact all the bones of the human spine, as well as its S-shape, are exquisitely designed to facilitate extended periods of running, walking, standing, sitting, and load carrying. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3265-3268). Baker Publishing Group. Kindle Edition.]
- Any Creator powerful enough to create the universe could completely rid Earth of hurricanes and tornadoes. The costs, however, would include at least one or more of the following: less rainfall, less evenly distributed rainfall, a lesser amount or lower quality of living space on the landmasses, or more extreme temperature differences between day and night. Even with fewer or less intense hurricanes and tornadoes, these same factors would still exist, though the costs might be lower. Still, the present level of hurricane and tornado activity yields the most optimal balance between advanced-life productivity and collateral damage. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3277-3281). Baker Publishing Group. Kindle Edition.]
- Hurricanes linger over oceans far longer than over land. Their powerful winds lift huge quantities of sea-salt aerosols from the oceans. These aerosols make up a large fraction of cloud nuclei that in turn play a critical role in raindrop formation.²⁵ Thus, hurricanes (and to a lesser degree tornadoes) ensure enough rain to support a large and diverse population of land life. These aerosols and the clouds that form from them also efficiently scatter solar radiation. So hurricanes act as Earth's thermostat, fulfilling a life-essential

role.²⁶ When tropical oceans get too hot, they generate hurricanes. The sea-salt aerosols produced by hurricanes cool the tropical oceans to a benign temperature. To a lesser degree, tornadoes also cool certain continental landmasses that have become too hot. [25. D. M. Murphy et al., “Influence of Sea-Salt on Aerosol Radiative Properties in the Southern Ocean Marine Boundary Layer,” *Nature* 392 (March 5, 1998): 62–65. 26. Nicholas R. Bates, Anthony H. Knap, and Anthony F. Michaels, “Contribution of Hurricanes to Local and Global Estimates of Air-Sea Exchange of CO₂,” *Nature* 395 (September 3, 1998): 58–61.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3285-3291). Baker Publishing Group. Kindle Edition.]

- Plate-tectonic activity, which gives rise to earthquakes, plays a critical role in building islands and continents, compensating for the Sun’s increasing luminosity and maintaining life-essential chemical cycles (see p. 155). It also provides an ongoing supply of nutrients to surface soils. The maintenance of these life-essential processes early in Earth’s history required much greater tectonic upheaval. Today, the level of activity is only about a fifth of what it was when Earth’s first life came on the scene. As with hurricanes and tornadoes, scientists note that the human race appeared on Earth at the ideal tectonic moment. Earthquake activity today is high enough to sustain adequate levels of various surface nutrients but low enough to allow for a global, high-tech civilization. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3292-3298). Baker Publishing Group. Kindle Edition.]
- For some time geologists have noted that the large, fast-moving glaciers predominant during ice ages contributed to the formation of many of Earth’s richest ore deposits. Geographers observe that ice ages and their resultant glacial sculpting of Earth’s crust are responsible for carving excellent harbors, fertile valleys, and gorgeous lakes on high-latitude landmasses. All provide value for a growing technological society. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3299-3302). Baker Publishing Group. Kindle Edition.]
- Soil studies reveal that humanity would be in serious trouble without enough forest and grass fires.²⁷ Fires eliminate dead vegetation on the forest floor

that inhibits growth. Burning off this organic litter gives seeds and seedlings greater access to the mineral soil beneath, enhancing their chance of germination. [Peter D. Moore, “Fire Damage Soils Our Forests,” *Nature* 384 (November 28, 1996): 312–13.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3307-3309). Baker Publishing Group. Kindle Edition.]

- Creation advocates are not the only ones called upon to answer why questions. Any viable scientific model, whether for creation or evolution, attempting to explain life’s history must find credible answers to such questions as: • Why does the structure of the universe, including its physical laws and constants, appear to be planned billions of years in advance for the arrival and benefit of the human species? • Why are Earth’s continents and oceans and the elements they contain optimal for advanced life? • Why are so-called transitional life-forms most abundant among species with the lowest probability to survive mutational and environmental changes and least abundant among species with the highest probabilities to survive such changes? • Why does life’s timing, quantity, type, and diversity throughout the past 3.8 billion years consistently anticipate the needs of future species, including humans? • Why does life’s quantity, kind, and diversity always precisely compensate for changes in the Sun’s luminosity? • Why are the laws of physics optimized to restrain the expression of evil? • Why are the exquisitely fine-tuned characteristics of the universe and solar system that make a home for humanity possible identical to the exquisitely fine-tuned cosmic and solar system characteristics that allow humans to observe the universe’s origin and development? • Why do so many plants and animals exhibit altruistic behavior? • Why are there so many examples in nature of the sudden appearance of multiple-partner symbiosis? • Why do humans everywhere distinguish between right and wrong, good and evil? • Why do humans alone, among all species on Earth, search for a sense of hope, purpose, and destiny? Attempts to develop credible answers to these challenging questions provide new opportunities to craft more complete and detailed models and to learn more about our world and humanity in the process. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3326-3344). Baker Publishing Group. Kindle Edition.]

14 Putting New Atheist Cosmic Models To The Test

- Arguably the most famous living atheist is Oxford biologist Richard Dawkins. His book *The God Delusion* sold 1.5 million copies its first year and remained on the New York Times nonfiction best-seller list for fifty-one consecutive weeks. In the fourth chapter Dawkins presents his “central argument” against the existence of God.¹ While acknowledging “the complex, improbable appearance of design in the universe,”² he dismisses “the natural temptation . . . to attribute the appearance of design to actual design.”³ [1. Richard Dawkins, *The God Delusion* (Boston: Houghton Mifflin, 2006), 187–89. 2. *Ibid.*, 188. 3. *Ibid.*] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3362-3366). Baker Publishing Group. Kindle Edition.]
- Dawkins claims that an appeal to God to explain the extreme statistical improbability of the universe, solar system, and Earth manifesting so many amazingly fine-tuned characteristics for life simply introduces something far less statistically probable.⁴ Therefore, Dawkins concludes that “God almost certainly does not exist.”⁵ Reinforcing this conclusion, he claims he has “yet to hear a theologian give a convincing answer despite numerous opportunities and invitations to do so.”⁶ [4. Richard Dawkins, *The God Delusion* (Boston: Houghton Mifflin, 2006), 188. 5. *Ibid.*, 189. 6. *Ibid.*, 187.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3366-3370). Baker Publishing Group. Kindle Edition.]
- One problem with this “multiverse” appeal is that no basis can be cited to explain why the infinite number of universes would all be different from one another. They might all be the same, or only a certain range of differences might be represented. For every conceivable variation in just one law of physics, one constant of physics, or one cosmic gross characteristic to be fully represented, an infinite number of an infinite number of universes (• ‡□‡ or infinity to the infinity power) might be required. A second problem with the multiverse appeal is that it potentially explains too much. Any improbable outcome can be attributed to chance. For example, in a truly infinite number of an infinite number of universes, where all the different universes manifest distinct properties and where every conceivable value for

every property is manifested, not only would there be the possibility of a planet sufficiently like Earth that it could sustain advanced life, but, in addition, there would be an infinite number of planets like Earth. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3407-3414). Baker Publishing Group. Kindle Edition.]

- Scientists didn't begin to present serious models for an infinite number of physically distinct universes beyond our own until after Freeman Dyson claimed that "the universe in some sense must have known that we were coming"¹⁵ and Stephen Hawking announced that "it would be very difficult to explain why the universe should have begun in just this way except as the act of a God who intended to create beings like us."¹⁶ [15. Freeman Dyson, *Disturbing the Universe* (New York: Harper and Row, 1979), 250. 16. Stephen W. Hawking, *A Brief History of Time* (New York: Bantam, 1988), 127.] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3428-3432). Baker Publishing Group. Kindle Edition.]
- It's important to note that the multiverse concept, at least in some contexts, is neither novel nor necessarily anti-theistic. In previous centuries, theologians often debated whether the universe may be infinite by virtue of its Source. Some argued that an infinite Creator would be satisfied with nothing less. Even those who take a minimalist perspective on God's creative activity must concede there may be more to what God created than just the universe in which humanity resides. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3456-3459). Baker Publishing Group. Kindle Edition.]

15 Putting RTB's Creation Model To The U.S. Constitution Test

- "Creation-science" and "evolution-science" are defined in the Act as follows:¹⁴ a. "Creation-science" means the scientific evidences for creation and inferences from those scientific evidences. Creation-science includes the scientific evidences and related inferences that indicate: (1) Sudden creation of the universe, energy, and life from nothing; (2) The insufficiency of mutation and natural selection in bringing about development of all living kinds from a single organism; (3) Changes only within fixed limits of originally created kinds of plants and animals; (4) Separate ancestry for man

and apes; (5) Explanation of earth's geology by catastrophism, including the occurrence of a worldwide flood; and (6) A relatively recent inception of the earth and living kinds. [McLean v. Arkansas Board of Education, 529 F. Supp 1255 (E.D. Ark 1982), section III, <http://www.talkorigins.org/faqs/mclean-v-arkansas.html> (accessed October 15, 2008).] [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3571-3577). Baker Publishing Group. Kindle Edition.]

- b. "Evolution-science" means the scientific evidences for evolution and inferences from those scientific evidences. Evolution-science includes the scientific evidences and related inferences that indicate: (1) Emergence by naturalistic processes of the universe from disordered matter and emergence of life from nonlife; (2) The sufficiency of mutation and natural selection in bringing about development of present living kinds from simple earlier kinds; (3) Emergence by mutation and natural selection of present living kinds from simple earlier kinds; (4) Emergence of man from a common ancestor with apes; (5) Explanation of the earth's geology and the evolutionary sequence by uniformitarianism; and (6) An inception several billion years ago of the earth and somewhat later of life. [Hugh Ross: *More Than a Theory (Revealing a Testable Model for Creation)* (Kindle Locations 3578-3583). Baker Publishing Group. Kindle Edition.]

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