# **Annotated References**

#### PART ONE

### Chapter 1

Bojowald, Martin. 2008. Follow the bouncing universe. *Scientific American* (October).

Cowen, Ron. 2008. State of the universe. *Science News* (15 March). This article summarizes the findings from 5 years of observations of the cosmic microwave background by WMAP.

### Chapter 2

Bromm, Volker, et al. 2009. The formation of the first stars and galaxies. Nature (7 May).

- Cowen, Ron. 2010. Among stars, heavyweight champ. *Science News* (14 August). Astronomers observed the largest known star in 2010 with a mass of 265 solar masses, well outside the theoretical limit of 100 solar masses, so theory will be modified.
- Overbye, Dennis. 2003. Scientist at work: Adam Reiss; his prey: dark energy in the cosmic abyss. *New York Times* (February 18). This is a more readable account of the discovery and search for dark energy.
- Petit, Charles. 2008. Ultramassive: as big as it gets. Science News (25 October).
- Reiss, Adam, et al. 1998. Observational evidence from supernovae for an accelerating universe and a cosmological constant. *The Astronomical Journal*, 116 (September).
- Simcoe, Robert A. 2004. The cosmic web. *American Scientist Online*, 92 (1). <a href="http://www.americanscientist.org/issues/feature/the-cosmic-web/1">http://www.americanscientist.org/issues/feature/the-cosmic-web/1</a>.

- Campbell, B., Walker, G. A. H., and Yang, S. 1988. A search for substellar companions to solar-type stars. *Astrophysical Journal* (15 August). This was the pioneering paper describing the radial velocity technique (measuring star wobble) and reporting the first suspected exoplanets. <a href="http://adsbit.harvard.edu/cgi-bin/nph-iarticle\_query?bibcode">http://adsbit.harvard.edu/cgi-bin/nph-iarticle\_query?bibcode</a> = 1988ApJ...331..902C>.
- Cowen, Ron. 2011. Liquid acquisition. Science News (15 January).
- Cowen, Ron. 2011. Planets take shape in embryonic gas clouds. *Science News* (25 March). <a href="http://www.sciencenews.org/view/generic/id/71776/title/Planets\_take\_shape\_in\_embryonic\_gas\_clouds">http://www.sciencenews.org/view/generic/id/71776/title/Planets\_take\_shape\_in\_embryonic\_gas\_clouds</a>.
- Cowen, Ron. 2011. Spacecraft sees signs of 1200-plus worlds. *Science News* (26 February). <a href="http://www.sciencenews.org/index/generic/activity/view/id/69476/title/">http://www.sciencenews.org/index/generic/activity/view/id/69476/title/</a> Spacecraft\_sees\_signs\_of\_1,200-plus\_worlds>.
- Huss, Gary R., Tachibana, Shogo, et al. 2008. Injection of short-lived radio nuclides into the early solar system from a faint supernova with mixing fallback. *The Astrophysical Journal*, 655:1382-1387.
- Lin, Douglas N. C. 2008. The genesis of planets. Scientific American (May).

- Matson, John. 2010. Shields up: Magnetized rocks push back origin of earth's magnetic field. Scientific American Online (4 May). <a href="http://www.scientificamerican.com/">http://www.scientificamerican.com/</a> article. cfm?id=geodynamo-start-up>
- Michel, Mayer and Didier, Queloz. 1995. A Jupiter-mass companion to a solar-type star. Nature (23 November). The first unquestioned exoplanet orbiting a sun-like star (Cygni 51) was reported by Mayer and Queloz from the Geneva Observatory.
- NASA. 2012. <a href="http://lambda.gsfc.nasa.gov/">http://lambda.gsfc.nasa.gov/</a> See for a complete listing of research findings from the WMAP mission and conclusions about the age of the universe.
- NASA Press. 1999. Earth's water probably didn't come from comets, Caltech researchers say. <a href="http://neo.jpl.nasa.gov/news/news008.html">http://neo.jpl.nasa.gov/news/news008.html</a>.
- NASA Science News. 2001. A taste for comet water (18 May). <a href="http://science.nasa.gov/science-news/science-at-nasa/2001/ast18may\_1/">http://science.nasa.gov/science-news/science-at-nasa/2001/ast18may\_1/</a>.
- Portegies Zwart, Simon F. 2009. The long lost siblings of the sun. *Scientific American* (November).
- Tachibana, S. and Huss, G. R. 2003. Iron-60 in troilites from an unequilibrated ordinary chondrite and the initial 60Fe/56Fe in the early solar system. 34th Lunar and Planetary Science (March).
- Webb, Stephen. 2002. If the Universe Is Teeming with Aliens...WHERE IS EVERYBODY?: Fifty Solutions to the Fermi Paradox and the Problem of Extraterrestrial Life. Las Vegas, NV: Praxis Publishing Ltd.
- Wordsworth, Robin D. et al. 2011. Gliese 581d is the first discovered terrestrial-mass exoplanet in the habitable zone. arXiv.org at Cornell University Library (5 May). <a href="http://arxiv.org/abs/1105.1031">http://arxiv.org/abs/1105.1031</a>.

### **PART TWO**

- de Duve, Christian. 1991. Blueprint for a Cell. Burlington, NC: Neil Patterson Publishers. Kauffman, Stuart A. 1993. Origins of Order: Self Organization and Selection in Evolution. New York: Oxford University Press.
- Kauffman, Stuart A. 2006. Beyond reductionism. *Edge, The Third Culture* (13 November). <a href="http://www.edge.org/3rd\_culture/kauffman06/kauffman06\_index.html">http://www.edge.org/3rd\_culture/kauffman06/kauffman06\_index.html</a>.
- Lee, Rosalind C. et al. 1993. The C-elegans heterochronic gene *lin-4* encodes small RNAs with antisense complementarity to *lin-14*. *Cel*. (3 December).
- Micro-RNA plays important role in mechanisms of human brain development and emergence of some mental diseases. 2006. *Medical News Today*. (25 April). <a href="http://www.medicalnewstoday.com/articles/42141.php">http://www.medicalnewstoday.com/articles/42141.php</a>.
- Mourelatos, Zissimos. 2008. The seeds of silence. Nature (4 September).
- Orgel, Lesley E. 1997. The origin of life on earth. <a href="http://eddieting.com/eng/originoflife/orgel.html">http://eddieting.com/eng/originoflife/orgel.html</a>.
- Tenenbaum, David. 2002. When did life on earth begin? Ask a rock. *Astrobiology Online Magazine* (14 October). <a href="http://www.astrobio.net/exclusive/293/when-did-life-on-earth-begin-ask-a-rock">http://www.astrobio.net/exclusive/293/when-did-life-on-earth-begin-ask-a-rock</a>.
- Vines, Gail. 2002. Wonderweed. New Scientist (2 December). Vines attributes this estimate to Elliot Meyerowitz of Caltech.

# Chapter 5

- Collini, Elisabetta, Scholes, Gregory, et al. 2010. Coherently wired light-harvesting in photosynthetic marine algae at ambient temperature. *Nature*, 463, 644-647.
- Engel, G.S. et al. 2007. Evidence for wavelike energy transfer through quantum coherence in photosynthetic complexes. *Nature*, 446, 782-786.

### **PART THREE**

# Chapter 6

Bryson, Bill. 2003. A Short History of Nearly Everything. New York: Broadway Books.

Darwin, Charles. 1871. *The Descent of Man, and Selection in Relation to Sex.* Re-published 2008. New York: Quill Pen Classics.

El Albani, Abderrazak, et al. 2010. Large colonial organisms with coordinated growth in oxygenated environments 2.1 Gyr ago. *Nature* (1 July).

Gould, Stephen J. 1989. Wonderful Life. New York: W.W. Norton.

Kump, Lee R. 2008. The rise of atmospheric oxygen. Nature, 451 (17 January).

Lipps, Jere. 2001. The "star burst" hypothesis for the diversification of the eukaryotes and the geologic record indicate very early origins for all major lineages. Presented at the annual meeting of the Geological Society of America, Boston.

Morris, Simon Conway. 1998. The Crucible of Creation. Oxford, UK: Oxford University Press.

Morris, Simon Conway. 2003. *Life's Solution—Inevitable Humans in a Lonely Universe*. Cambridge, UK: Cambridge University Press.

The Pew Research Center for the People and the Press. 2009. Fewer Americans see solid evidence of global warming. (22 October). <a href="http://people-press.org/report/556/global-warming">http://people-press.org/report/556/global-warming</a>.

Vines, Gail. 2000. Wonderweed. New Scientist (2 December). Vines attributes this estimate to Elliot Meyerowitz of Caltech.

- Algeo, Thomas J. et al. 1995. Late Devonian oceanic anoxic events and biotic crises: "rooted" in the evolution of vascular land plants? *GSA Today*, 5 (3). <ftp://rock.geosociety.org/pub/GSAToday/gt9503.pdf>.
- Alvarez, Luis et al. 1980. Extraterrestrial cause for the Cretaceous-Tertiary extinction. *Science* (6 June).
- Brooks, T.M., Gittleman, J.L., Pimm, S.L., and Russell, G. J. 1995. The future of biodiversity. *Science*, 269, 347-350.
- Falkowski, Paul G. et al. 2005. The rise of oxygen over the past 205 million years and the evolution of large placental mammals. *Science* (30 September). See also <a href="http://www.msnbc.msn.com/id/9536143/-story">http://www.msnbc.msn.com/id/9536143/-story</a>.
- The Great Dying. 2002. NASA Science (28 January). <a href="http://science.nasa.gov/science-news/science-at-nasa/2002/28jan\_extinction/">http://science.nasa.gov/science-news/science-at-nasa/2002/28jan\_extinction/</a>.
- Lawton, J.H. and May, R.M. 1995. Extinction Rates. London: Oxford University Press.
- MacPhee, R.D.E. 1999. Extinctions in Near Time: Causes, Contexts, and Consequences. New York: Kluwer Academic Publishers.
- Schulte, Peter et al. 2010. The Chicxulub asteroid impact and mass extinction at the cretaceous-paleogene boundary. *Science* (5 March).

- Sheehan, Peter M. 2001. The late Ordovician mass extinction. *Annual Review of Earth and Planetary Sciences*, 29, 331-364.
- University of California Riverside. 2002. Gondwana split sorts out mammalian evolution. *ScienceDaily* (21 January). <a href="http://www.sciencedaily.com/releases/2002/01/020121090546.htm">http://www.sciencedaily.com/releases/2002/01/020121090546.htm</a>.

### PART FOUR

### Chapter 8

- Berger, Lee R. et al. 2010. *Australopithecus sediba*: A new species of homo-like Australopith from South Africa. *Science* (9 April).
- Haile-Selassie, Yohannes, Lovejoy, Owen C., et al. 2010. An early Australopithecus afarensis postcranium from Woranso-Mille, Ethiopia. Proceedings of the National Academy of Sciences.
- McPherron, Shannon P. 2010. Evidence for stone-tool-assisted consumption of animal tissues before 3.39 million years ago at Dikika, Ethiopa. *Nature*, 466 (7308), 857-860.
- Raichlen, David A. et al. 2010. Laetoli footprints preserve earliest direct evidence of human-like bipedal biomechanics. *PLoS One* (22 March). <a href="http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2842428/">http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2842428/</a>.
- Science Magazine. 2009. October 2 issue devoted the cover and eleven articles to Ardipithecus ramidus, authored by 47 different researchers from around the world including Tim White, C. Owen Lovejoy, and Yohannes Haile-Selassie.
- Stone, Richard. 2009. Paleoanthropology: Still seeking Peking man. Science (3 July).
- Thorpe, S. K. S., Holder, R. L., and Crompton, R. H. 2007. Origin of human bipedalism as an adaptation for locomotion on flexible branches. *Science* (1 June).
- Wong, Kate. 2010. The first butchers. Scientific American (October).

### Chapter 9

Bower, Bruce. 2011. Oldest hand axes discovered. Science News (8 October).

Bryson, Bill. 2003. A Short History of Nearly Everything. New York: Broadway Books.

Carbonell, Eudald et al. 2008. The first European? *Nature* (27 March).

- Feldman, Marcus, Cavalli, Luigi L., Myers, Richard M., et al. 2008. Worldwide human relationships inferred from genome-wide patterns of variation. *Science* (22 February).
- Hanihara, Tsunehiko, Manica, Andrea, et al. 2007. The effect of ancient population bottlenecks on human phenotypic variation. *Nature* (19 July).
- Krings, Matthias, Pääbo, Svante, et al. 1999. DNA sequence of the mitochondrial hypervariable region II from the Neanderthal type specimen. *PNAS* (11 May).
- Lisiecki, Lorraine E. and Raymo, Maureen E. 2005. A Pliocene-Pleistocene stack of 57 globally distributed benthic  $\delta$  <sup>18</sup>O records. *Paleoceanography*, 20.
- Lordkipanidze, David et al. 2007. Postcranial evidence from early *Homo* from Dmanisi, Georgia. *Nature* (20 December). <a href="http://www.dmanisi.org.ge/majordiscoveries.html">http://www.dmanisi.org.ge/majordiscoveries.html</a>>.
- National Research Council (U.S.) Committee. 2006. Surface temperature reconstructions for the last 2,000 years. *National Academies Press*.
- Pääbo, Svante et al. 2006. Analysis of one million base pairs of Neanderthal DNA. *Nature* (16 November).
- Pääbo, Svante, Pritchard, Jonathan K., Rubin, Edward M., et al. 2006. Sequencing and analysis of Neanderthal genomic DNA. *Science* (17 November).

- Pääbo, Svante et al. 2007. The derived FOXP2 variant of modern humans was shared with Neanderthals. Current Biology (6 November).
- Pääbo, Svante, Reich, David, et al. 2010. A draft sequence of the Neanderthal genome. *Science* (7 May).
- Potts, Richard. 1996. Evolution and climate variability. Science (16 August).
- Reich, David, Viola, Bence, Pääbo, Svante, et al. 2010. Genetic history of an archaic hominin group from Denisova Cave in Siberia. *Nature* (23 December).
- Rose, Mark. 1997. A new species? Archaeology Online News (29 July).
- Saey, Tina Hesman. 2010. Modern people carry around Neanderthal DNA, genome reveals. *Science News* (5 June).
- Wong, Kate. 2009. Twilight of the Neandertals. Scientific American (August).

### PART FIVE

- Ambrose, Stanley. 1998. Late Pleistocene human population bottlenecks, volcanic winter, and differentiation of modern humans. *Journal of Human Evolution* (June).
- Balter, Michael. 2009. Early start for human art? Ochre may revise timeline. *Science* (30 January).
- Behar, Doron M. et al. 2008. The dawn of human matrilineal diversity. *American Journal of Human Genetics* (24 April).
- Bower, Bruce. 2002. Chinese roots: Skull may complicate human-origins debate. *Science News* (21 December).
- Cann, Rebecca L., Stoneking, Mark, and Wilson, Allan C. 1987. Mitochondrial DNA and human evolution. *Nature* (1 January).
- Cavalli-Sforza, L.L., Underhill, P.A., et al. 1996. Geographic clustering of human Y-chromosome haplotypes. *Annals of Human Genetics* (September).
- Curtis W. Marean et al. 2007. Early human use of marine resources and pigment in South Africa during the Middle Pleistocene. *Nature* (18 October).
- Diamond, Jared. 1992. The Third Chimpanzee. New York: Harper Collins.
- Donnelly, Peter et al. 2000. The mutation rate in the human mtDNA control region. *The American Journal of Human Genetics* (1 May).
- Green, Richard E., Reich, David, Pääbo, Svante, et al. 2010. A draft sequence of the Neandertal genome. *Science* (7 May).
- Ingman, Max, Kaessmann, Henrik, Pääbo, Svante, and Gyllensten, Ulf. 2000. Mitochondrial genome variation and the origin of modern humans. *Nature* (7 December).
- Klein, Richard G. and Edgar, Blake. 2002. *The Dawn of Human Culture*. New York: Wiley and Sons.
- Petraglia, Michael et al. 2007. Middle Paleolithic assemblages from the Indian subcontinent before and after the Toba super-eruption. *Science* (5 July).
- Richerson, Peter J. and Boyd, Robert. 2006. Not By Genes Alone, 5. Chicago: University of Chicago Press.
- Scholz, Christopher A. et al. 2007. East African megadroughts between 135 and 75 thousand years ago and bearing on early-modern human origins. *PNAS* (16 October).
- Stix, Gary. 2008. Traces of a distant past. Scientific American (July).

- Stoneking, Mark and Pakendorf, Brigitte. 2005. Mitochondrial DNA and human evolution. *Annual Review of Genomics and Human Genetics*, 6, 165-183.
- Vanhaeren, Marian, d'Errico, Francesco, et al. 2006. Middle Paleolithic shell beads in Israel and Algeria. *Science* (23 June).
- Weber, George. 2004. Toba Volcano. <a href="http://www.andaman.org/org/BOOK/originals/">http://www.andaman.org/org/BOOK/originals/</a> Weber-Toba/textr.htm>. An excellent discussion of the Toba event and human evolution.

# Chapter 11

- Balter, Michael. 2009. Whence the first Americans? *ScienceNow Daily News* (8 January). Bar-Yosef, Ofer. 1998. The Natufian culture in the Levant, threshold to the origins of agriculture. *Evolutionary Anthropology*, 6, 159-177.
- Cavalli, Sforza L.L., Underhill, P.A., et al. 1996. Geographic clustering of human Y-chromosome haplotypes. *Annals of Human Genetics* (September).
- Coatsworth, John. 1996. Presidential Address: Welfare. The American Historical Review (February).
- Cruciani, Fulvio et al. 2011. A revised root for the human Y chromosomal phylogenetic tree: the origin of patrilineal diversity in Africa. *The American Journal of Human Genetics* (10 June).
- Diamond, Jared. 1999. Guns, Germs, and Steel, 36. New York: Norton.
- Diamond, Jared. 2005. Collapse: How Societies Choose to Fail or Succeed. New York: Viking. Dillehay, Tom D. et al. 2007. Preceramic adoption of peanut, squash, and cotton in northern Peru. Science (29 June).
- Dillehay, Tom D. et al. 2008. Monte Verde: Seaweed, food, medicine, and the peopling of South America. *Science* (9 May).
- Finlayson, Bill and Kuijt, Ian. 2009. Evidence for food storage and predomestication granaries 11,000 years ago in the Jordan Valley. *PNAS* (July 7).
- First Americans arrived as two separate migrations, according to new genetic evidence. 2009. ScienceDaily (21 January). <a href="http://www.sciencedaily.com/releases/2009/">http://www.sciencedaily.com/releases/2009/</a> 01/090108121618.htm>.
- Gilbert, M, Thomas, B., et al. 2008. DNA from pre-Clovis human coprolites in Oregon, North America. *Science* (9 May).
- Krause, Johannes et al. 2007. The derived FOXP2 variant of modern humans was shared by the Neanderthals. *Current Biology* (6 November).
- Pääbo, Svante, Reich, David, et al. 2010. A draft sequence of the Neanderthal genome. *Science* (7 May).
- Pakendorf, Brigitte and Stoneking, Mark. 2005. Mitochondrial DNA and human evolution. *Annual Review of Genomics and Human Genetics* 6, 165-183.
- Perego, Ugo A. et al. 2009. Distinctive Paleo-Indian migration routes from Beringia marked by two rare mtDNA haplogroups. *Current Biology* (13 January).
- Pringle, Heather. 2011. The 1st Americans. Scientific American (November).

# Chapter 12

Christian, David. 2004. Maps of Time: An Introduction to Big History. Berkeley CA: University of California Press.

Harris, Marvin. 1974. Cannibals and Kings: The Origins of Cultures. New York: Random House. Lawler, Andrew. 2007. Archaeology: ancient writing or modern fakery? Science (3 August). Leakey, Richard E. and Lewin, Roger. 1991. Origins. New York: Penguin Books. Ur, Jason A. et al. 1974. Early urban development in the Near East. Science (31 August).