

Selected Book List for Freshman Seminar “Search for Life in the Universe”

- ❖ All of the books listed here are shelved in the UO Science Library (unless they are checked out), except for the one that has “KNIGHT” before its call number.
- ❖ If a book is not available here, you should be able to request it from the Summit catalog, and have it within a few days.

Popular Science Books...

...on Astrobiology (aka Exobiology)

Bennett, Jeffrey O. *Life in the Universe*. San Francisco: Addison Wesley, 2003. **QH327 .B45 2003**

- Large format, well illustrated, textbook-style and very accessible.

Clark, Stuart G. *Life on Other Worlds and How to Find It*. London; New York: Springer/Praxis, 2000. **QB53 .C566 2000**

- Fairly short, easy to read; a pretty good place to start.

The Search for Life in the Universe, 3rd ed. Sausalito, Calif.: University Science Books, 2001. **QB54 .G58 2001**

- Title sound familiar? An actual textbook, covering all the topics your class does.

Grady, Monica M. *Astrobiology*. Washington, D.C.: Smithsonian Institution Press, 2001. **QB54 .G73 2001**

- A brief, but very informative and nicely illustrated book on the topic.

Lunine, Jonathan I. *Astrobiology: A Multidisciplinary Approach*. San Francisco: Pearson Addison Wesley, 2005. **QH325 .L86 2005**

- More in depth and scientific, but still very approachable and interesting.

Plaxco, Kevin W. *Astrobiology: A Brief Introduction*. Baltimore: Johns Hopkins University Press, 2006. **QH325 .P57 2006**

- Sparsely illustrated, but very readable.

Ulmschneider, Peter. *Intelligent Life in the Universe: Principles and Requirements Behind its Emergence*. Berlin: Springer-Verlag, 2006. **QH325 .U55 2006**

- Pretty advanced, but it covers lots of interesting stuff the others book don't, plus good pictures.

... on Evolution and Origin of Life

Charlesworth, Brian and Deborah. *Evolution: A Very Short Introduction*. Oxford; New York: Oxford University Press, 2003. **QH367 .C43 2007**

- ...in a very small book that will literally fit in your pocket.

Dawkins, Richard. *The Ancestor's Tale: A Pilgrimage to the Dawn of Evolution*. Boston: Houghton Mifflin, 2004. **QH361 .D39 2004**

- A step-by-step account of human evolution, working backwards through time.

Dawkins, Richard. (1986). *The Blind Watchmaker*. London: Penguin Books, 1991. **QH366.2 .D37 1991**

- Considered a modern “classic”; for this class, see especially the chapter on “Origins and miracles.”

Futuyma, Douglas J. *Evolutionary Biology*, 3rd ed. Sunderland, Mass.: Sinauer Associates, 1998. **QH366.2 .F87 1998**

- A textbook, but one of the best and most popular texts on the subject.

Gould, Stephen Jay. *Wonderful Life: The Burgess Shale and the Nature of History*. New York: W.W. Norton, 1989. **QE770 .G67 1989**

- Who knew paleontology could be so fascinating? Gould takes you through the weird world and mass extinction of bizarre Cambrian sea creatures that illustrate the “pageant of evolution as a staggeringly improbable series of events.”

Kauffman, Stuart A. *At Home in the Universe: The Search for Laws of Self-Organization and Complexity*. New York: Oxford University Press, 1995. **QH325 .K388 1995**

- A take on evolution and the origins of life and civilization from the viewpoint of a well-known researcher in complexity theory.

Margulis, Lynn, and Dorion Sagan. *What is life?* New York: Simon & Schuster, 1995. **QH325 .M298 1995**

- Large format and lavishly illustrated, this makes easy reading. See also *Early Life: Evolution on the Precambrian Earth*, by Lynn Margulis and Michael F. Dolan **QH325 .M29 2002**

Mayr, Ernst. *What Evolution Is*. New York: Basic Books, 2001. **QH366.2 .M3933 2001**

- “A survey of the theory by an opinionated master.” Highly recommended; excellent appendices at the back in a “FAQ” type format.

Maynard Smith, John and Eörs Szathmáry. *The Origins of Life: From the Birth of Life to the Origin of Language*. Oxford: Oxford University Press, 1999. **QH325 .M39 1999**

- The title pretty much describes it.

Zimmer, Carl. *Evolution: The Triumph of an Idea*. New York: HarperCollins, 2001. **QH361 .Z48 2001**

- An excellent and very accessible overview.

...on Cosmology and Astronomy

Cattermole, Peter. *Earth and Other Planets: Geology and Space Research*. New York: Oxford University Press, 1995. **QB6631 .C37 1995**

- Large format with lots of color pictures. An easy introduction to topics such as how atmospheres evolve, magmas and volcanoes emerge, crustal plates form, etc.

Davies, Paul. *Cosmic Jackpot: Why Our Universe is Just Right for Life*. Boston: Houghton Mifflin, 2007. **BS651 .D325 2007**

- Haven't seen it yet, but good reviews (although a physicist reviewing it thought it likely to be controversial.) The author analyzes the so-called "anthropic principle", i.e. why do conditions in the universe just happen to be right for life? Along the way he covers much of the cutting edge of cosmology and physics in an entertaining style.

Drury, Stephen A. *Stepping Stones: The Making of Our Home World*. Oxford; New York: Oxford University Press, 1999. **QB632 .D78 1999**.

- This straddles astronomy and earth science or geology, and explores how the earth, the conditions for life, and life, came to be.

Harrison, Edward. *Cosmology: The Science of the Universe*, 2nd ed. Cambridge; New York: Cambridge University Press, 2000.

QB981 .H276 2000

- A recommended textbook, if you want to Get Serious. A final chapter on 'Life in the Universe', with sources.

Kirshner, Robert P. *The Extravagant Universe: Exploding Stars, Dark Energy and the Accelerating Cosmos*. Princeton, N.J.: Princeton University Press, 2002.

QB813.S95 K57 2002

- A few equations (gasp), but engagingly written, and peppered with amusing anecdotes from the author's own research career.

Odenwald, Sten F. *Back to the Astronomy Café: More Questions and Answers about the Cosmos from "Ask the Astronomer"*. Boulder, Colo.: Westview Press, 2003.

QB52 .O35 2003

- Lots of useful info in here, as well as answers to fun questions such as "what would happen if an astronaut took a glove off in space?" (ick) and "is there such a thing as hyperspace?"

Petersen, Carolyn Collins, and John C. Brandt. *Visions of the Cosmos*. Cambridge, UK; New York: Cambridge University Press, 2003. **QB68 .P46 2003**

- If you want great pictures, this is "spectacularly illustrated" and a "superb encapsulation of modern astronomy."

Plait, Philip C. *Bad Astronomy: Misconceptions and Misuses Revealed, from Astrology to the Moon Landing 'Hoax'*. New York: Wiley, 2002.

QB44.3 .P58 2002

- Pretty much what the title says – and fun reading.

Singh, Simon. *Big Bang: The Origin of the Universe*. New York: Fourth Estate, 2004.

QB991.B54 S56 2004

- Highly readable history of cosmology explaining how we eventually reached the big bang theory, and the debates that surrounded it.

Weinberg, Steven. *The First Three Minutes: A Modern View of the Origin of the Universe*. (updated ed.) New York: Basic Books, 1993.

QB981 .W48 1993

- Though getting on in years now (first published in 1977), authored by a Nobel physicist and considered by many to be one of THE best popular science books.

... on Aliens, Space and Time Travel, Quantum Weirdness, and other useful stuff

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

Q162 .B88 2003

- "... explores the most intriguing and consequential questions that science seeks to answer and attempts to understand everything that has transpired from the Big Bang to the rise of civilization."

Calder, Nigel. *Einstein's Universe*. New York: Viking Press, 1979. **QC173.55 .C34**

- Widely regarded as a brilliantly written layperson's primer on relativity, just don't rely on it for current research about the universe, given its age.

Chown, Marcus. *The Quantum Zoo: A Tourist's Guide to the Neverending Universe*.

Washington, D.C.: Joseph Henry Press, 2006

KNIGHT QC174.12 .C486 2006

Gribbin, John R. *In Search of Schrödinger's Cat: The Startling World of Quantum Physics Explained*. London: Wildwood House, 1984. **QC173.98 .G75 1984b**

- John Gribbin does as good a job as anyone can at explaining quantum physics to the layperson – and he's fun to read. If you want more, see his: *Schrödinger's kittens and the search for reality: solving the quantum mysteries*. **QC174.12 .G747 1995**

Krauss, Lawrence M. *The Physics of Star Trek*. New York: Basic Books, c1995. **QB500 .K65 1995**

_____. *Beyond Star Trek: Physics from Alien Invasions to the End of Time*. New York: BasicBooks, c1997. **QB500 .K64 1997**

- Both of the above books are great fun for even the casual Trekkie, as well as educational. Written by a physics professor, they explain the physics of how the phenomena in the series and movies might work (or not), and how probable or improbable they are.

Thorne, Kip S. *Black Holes and Time Warps: Einstein's Outrageous Legacy*. New York: W.W. Norton, 1995. **QC6 .T526 1995**

- If you really want to bend your mind and get into curved space-time and wormholes and all that, Kip Thorne is your guy.

Toomey, David M. *The New Time Travelers: A Journey to the Frontiers of Physics*. New York: W. W. Norton, 2007. **QC173.59.S65 T66 2007**

- More mind-bending, time-bending fun. This book describes how some modern physicists who are Really Smart People have investigated the viability of time travel.