

Astronomical Pseudo-Science: A Skeptic's Resource List

by Andrew Fraknoi
(Foothill College & ASP)

This is a selected list of resources for those who want to examine with a skeptical eye some of the claims at the fringes of science that seem connected to astronomy. Educators can use the enormous media and student interest in some of these topics as a way of generating discussion about what constitutes science and what does not. It's an opportunity to explain how the scientific method allows us to test controversial hypotheses and determine whether nature really works in the way they claim. The claims listed here generally evaporate under the scrutiny of careful observation and experiment.

Table of Contents:

1. Astrology
2. UFO's as Alien Spaceships
3. Crop Circles
4. The "Face" on Mars
5. The Full Moon and Lunacy
6. The Dogon Tribe and Sirius B
7. Immanuel Velikovsky and *Worlds in Collision*
8. Ancient Astronauts and Erich Von Daniken
9. Astronomical Aspects of Creationism and Intelligent Design
10. The "Great Moon Hoax": Did Astronauts Land on the Moon?
11. Doomsday 2012 and the Planet Nibiru
12. Miscellaneous Topics in Astronomical Pseudo-science

1. Astrology

Perhaps the best known field of astronomical pseudo-science is the ancient idea that the position of the Sun, Moon, and planets at the moment we are born somehow affects our subsequent personality, career, or love-life. Astrology got a big media boost in 1988 when it was revealed that, for a large part of his term, President's Reagan's schedule had been controlled by the predictions of a San Francisco astrologer (who had been on

Nancy Reagan's payroll.) However, astrology is also the field in which the largest number of scientific tests have been performed and the evidence clearly demonstrates that astrological connections are no more than wishful thinking.

Culver, Roger & Ianna, Philip *Astrology: True or False*.

1988, Prometheus Books. The best skeptical book.

Fraknoi, A. "Your Astrology Defense Kit" in *Sky & Telescope*, Aug. 1989, p. 146. Intro with skeptical questions. (Available on *The Universe at Your Fingertips* disk.)

Astrology and Science Web Site:

<http://www.astrology-and-science.com/hpage.htm>

Ivan Kelly and others keep some of the best articles and research studies on this crowded site.

The Astrotest: <http://www.skepsis.nl/astrot.html> Dutch skeptic Rob Nanninga describes an experimental test of astrology done with the help of astrologers.

The Real Romance in the Stars:

<http://www.independent.co.uk/opinion/the-real-romance-in-the-stars-1527970.html>

Biologist Richard Dawkins wrote an angry column to a British newspaper flirting with astrology and you can see it here with a few later notes.

Dean, G. "Does Astrology Need to be True?" in *Skeptical Inquirer*, Winter 86-87, p. 116; Spring 1987, p. 257. An important examination of tests about astrology.

Dean, G. & Kelly, I. "Does Astrology Work: Astrology and Skepticism 1975-2000" in Kurtz, Paul, ed. *Skeptical Odysseys*. 2001, Prometheus Books.

Kelly, I. "Modern Astrology: A Critique" in *Psychological Reports*, vol. 81, p. 1035 (1997). An excellent review. (An expanded version can be found on the Astrology and Science website above.)

Kelly, I. "Why Astrology Doesn't Work" in *Psychological Reports*, vol. 82, p. 527 (1998).

Kurtz, P. & Fraknoi, A. "Scientific Tests of Astrology Do Not Support Its Claims" in *Skeptical Inquirer*, Spring 1985, p. 210.

Kurtz, P., et al. "Astrology and the Presidency" in *Skeptical Inquirer*, Fall 1988, p. 3. A good summary of the controversy concerning astrology in the Reagan White House.

Lovi, G. "Zodiacal Signs Versus Constellations" in *Sky & Telescope*, Nov. 1987, p.507.

2. UFO's as Alien Spaceships

For decades the media have given enormous attention to sensational claims that vague lights in the sky are actually extra-terrestrial spacecraft. Over the years, the claims have grown to include crashes of such alien spacecraft and even kidnappings of unsuspecting Earth inhabitants by aliens. A sober examination of these claims reveals that there is a lot LESS to them than first meets the eye: when there is enough evidence, UFO claims can be explained by perfectly natural terrestrial or celestial phenomena (and, all too frequently, as deliberate hoaxes), while alien abductions seem to take place in the mind of the victim or the therapist, rather than in the real world. This section begins with readings on UFO claims in general, and then moves to information about specific famous UFO cases (including the almost legendary Roswell incident, which turns out to have been the crash of a top-secret balloon-flown package designed to search for atmospheric evidence of Russian nuclear tests.)

Clancy, Susan *Abducted: How People Come to Believe They Were Kidnapped by Aliens*. 2005, Harvard U. Press. Revealing psychological analysis of people who believe they were abducted.

Frazier, Kenneth, et al., eds. *The UFO Invasion*. 1997, Prometheus Books. A fine collection of articles on some of the key UFO cases and ideas.

Klass, Philip *UFO's Explained*. 1974, Vintage paperback. *UFO's: The Public Deceived*. 1983, Prometheus Books. *UFO Abductions: A Dangerous Game*. 1988, Prometheus. Klass was the leading UFO investigator in the world, and his books are a model of UFO detective work.

Peebles, Curtis *Watch the Skies: A Chronicle of the Flying Saucer Myth*. 1994, Smithsonian Institution

Press. A historical study of the UFO movement. Shaeffer, Robert *The UFO Sightings: The Evidence*. 1998, Prometheus Books. Thorough, responsible review by a noted UFO skeptic.

Gleick, J. "The Doctor's Plot" in *The New Republic*, 24 May 1994. A *New York Times* reporter examines the work of John Mack on UFO abductions and critiques the whole phenomenon and the media's exploitation of it:

<http://www.around.com/abduct.html>

Jaroff, L. "Did Aliens Really Land" in *Time*, June 23, 1997, p. 68. A skeptical analysis of the Roswell incident. (Many good Roswell articles can also be found on the CSI web site: <http://www.csicop.org>)

Klass, P. "A Field Guide to UFO's" in *Astronomy*, Sep. 1997, p. 39. Natural explanations for UFO's.

Sagan, Carl *The Demon-Haunted World*. 1995, Random House. Chapters 4-11 are a marvelous debunking of many well-known UFO cases and an examination of the psychology behind them.

Special issue of *Skeptical Inquirer* on UFO's, Jan/Feb. 2009: http://www.csicop.org/si/archive/category/volume_33.1

Ian Ridpath UFO Skeptic Page:

<http://www.ianridpath.com/ufo/ufoindex.htm>

British science writer investigates and explains UFO reports, and discusses astronomical causes of UFO sightings.

James Oberg's Space Age Myths:

<http://www.jamesoberg.com/ufo.html> Veteran space journalist Oberg explains a number of UFO cases, including those involving astronauts and cosmonauts.

Alien Autopsy Hoax:

http://www.csicop.org/si/show/alien_autopsy_hoax/ About a purported film showing an autopsy of an "alien" body recovered at Roswell, New Mexico.

Robert Shaeffer's Debunker Pages:

<http://www.debunker.com> Has lots of good information on UFO's and other pseudo-science. Some of the pages deal with political issues, however.

3. Crop Circles

Despite sensational claims of alien visitors making patterns in British wheat fields (a claim reinforced by the horror movie *Signs*), the evidence indicates that they

are the work of earthly hoaxsters. Both the number and complexity of the crop circles seems to increase with media coverage, and several teams of hoaxter in Europe and America have now confessed.

Nickell, J. "Circular Reasoning" in *Skeptical Inquirer*, Sep/Oct. 2002, p. 17. Review by skeptical investigator. See: http://www.csicop.org/si/show/circular_reasoning_the_mystery_of_crop_circles_and_their_orbs_of_light/

Schnabel, Jim *Round in Circles*. 2003, Prometheus Books. A science writer gives the history and explores the fascination different kinds of people have for crop circles.

Nickell, J. & Fischer, J. "The Crop-Circle Phenomenon: An Investigative Report" in *Skeptical Inquirer*, Winter 1992, p. 136. A detailed investigation, with many cases and much evidence.

Nickell, J. "Crop Circle Mania Wanes" in *Skeptical Inquirer*, May/June 1995, p. 41. Brief follow-up to the above.

Crop Circle Report (CSI Archive): <http://web.archive.org/web/20060707212846/http://www.csicop.org/hoaxwatch/cropcircles.html>

4. The "Face" on Mars

A popular "government conspiracy" theory held that NASA has actually discovered a human face (as well as pyramids and other structures) built by an ancient civilization on Mars, but was withholding crucial information from the public about the profound implications of this discovery. The real story is a lot less exciting and involves a perfectly natural geologic formation on the red planet. In spring 1998, the Mars Observer spacecraft took a much more detailed close-up image of the region in question, and found no evidence of anything that looked unnatural or like a face.

Morrison, D. "MGS Photographs 'Face on Mars'" in *Skeptical Inquirer*, Jul/Aug. 1998, p. 23.

Morrison, D. "UFO's and Aliens in Space" in *Skeptical Inquirer*, Jan/Feb. 2009, p. 30. An update on the "face" on Mars, and a bit about supposed astronaut encounters with aliens. (See: http://www.csicop.org/si/show/ufos_and.aliens_in.space/)

Sagan, Carl "The Man in the Moon and the Face on

Mars," Chapter 3 of his book, *The Demon-Haunted World*. 1995, Random House.

Posner, G. "The Face Behind the Face on Mars: A Skeptical Look at Richard Hoagland" in *Skeptical Inquirer*, Nov/Dec. 2000, p. 20. The full story of the writer who has spread the myth.

Posner, G. "Putting a Better Face on the 'Face' on Mars" in *Skeptical Inquirer*, May/June 2001, p.65. Update.

NASA Educational Discussion of "Face": http://science.nasa.gov/headlines/y2001/ast24may_1.htm

Just for fun, here are a few more "faces" on Mars, as found in old images:

http://www.tampabay skeptics.org/Mars_morefaces.html

5. The Full Moon and Lunacy

The idea that more crazy behavior takes place during a full moon is well ingrained in folk wisdom (and in the use of the word "lunacy" to describe craziness). Statistical tests, however, show that there is no such effect, except in the mind of witnesses (perhaps influenced by legends that associate the Sun with good and the Moon with evil.) Since the full moon is bright and up all night long, it is more likely to reveal events that also happen during other phases, but are more likely to go undetected when it's dark.

Moonstruck:

<http://faculty.washington.edu/chudler/moon.html>
(An overview of the many lunacy studies).

Branham, R. "Did the Moon Sink the Titanic?" in *Skeptical Inquirer*, Jul/Aug. 1995, vol. 19, no. 4, p. 30.

Byrnes, G. & Kelly, I. "Crisis Calls and Lunar Cycles: A 20-Year Review" in *Psychological Reports*, vol. 71, p. 779 (1992).

Culver, R., et al. "Moon Mechanisms and Myths: A Critical Appraisal of Explanations of Purported Lunar Effects on Human Behavior" in *Psychological Reports*, vol. 62, p. 683 (1988).

Kelly, I., et al. "The Moon Was Full and Nothing Happened" in *Skeptical Inquirer*, Winter 1985-86, vol. 10, p. 129.

Kelly, I., et al. "World-wide Disasters and Moon Phases" in *Skeptical Inquirer*, Spring 1990, vol. 14, no. 3, p. 298.

Rotton, J. “Moonshine” in *Skeptical Inquirer*, May/June 1997, p. 44. A detailed review of a book by the most famous author who has claimed moon and behavior connections. (On-line at:

<http://www.csicop.org/si/show/moonshine/>)

Rotton, J. & Kelly, I. “The Lunacy of It All: Lunar Phases and Human Behavior” in *Mercury* (the magazine of the Astronomical Society of the Pacific), May/June 1986, p. 1988.

Full Moon and Lunar Effects:

<http://skeptdic.com/fullmoon.html> (Part of the *Skeptical Dictionary* site).

6. The Dogon Tribe and Sirius B

Several popular authors have touted the story of an African tribe that somehow acquired knowledge of the dim white-dwarf star around Sirius (which is visible only with the aid of larger telescopes.) Some see this as evidence of extraterrestrial visitors, but the real explanation probably involves the *European* visitors who were gathering information about the tribe and had read about the discovery of Sirius B before they left and discussed it with the tribe.

Brecher, K. “Sirius Enigmas” in Brecher, Kenneth & Feirtag, M., eds. *Astronomy of the Ancients*. 1979, MIT Press.

Krupp, E. “Observatories of the Gods and Other Astronomical Fantasies” in Krupp, E.C., ed. *In Search of Ancient Astronomies*. 1977, Doubleday. Debunks von Daniken and Velikovsky’s ideas, as well as the Sirius myth.

Ortiz de Montellano, B. “The Dogon People Revisited” in *Skeptical Inquirer*, Nov/Dec. 1996, p. 39. Excellent up-to-date review.

Ridpath, I. “Investigating the Sirius Mystery” in *Skeptical Inquirer*, Fall 1978, p. 56.

Sagan, Carl “White Dwarfs and Little Green Men” in *Broca’s Brain*. 1979, Random House.

Sirius Matters: http://chandra.harvard.edu/chronicle/0400/sirius_part2.html The Chandra Observatory site has a short, skeptical introduction to this issue.

Sirius Mystery:

<http://www.debunker.com/texts/dogon.html> Space journalist James Oberg takes a skeptical look in an

excerpt from a 1982 book.

The Skeptical Dictionary Entry on the Dogon:

<http://www.skeptdic.com/dogon.html>

7. Immanuel Velikovsky and Worlds in Collision

An Austrian psychiatrist and amateur scholar, Velikovsky touted the thesis that ancient religious writings record evidence of recent catastrophes in the solar system, including the bizarre idea that Venus was a comet disgorged by Jupiter in historic times. His writing were once very popular, but now only a small underground of true believers keeps his work alive.

Goldsmith, Donald, ed. *Scientists Confront Velikovsky*. 1977, Norton. Proceedings of a symposium at the 1974 meeting of the American Association for the Advancement of Science.

Gould, S. “Velikovsky in Collision” in *Natural History*, Mar. 1975. (On the web at:

http://www.stephenjaygould.org/ctrl/gould_velikovsky.html)

Krupp, E. “Observatories of the Gods and Other Astronomical Fantasies” in Krupp, E.C., ed. *In Search of Ancient Astronomies*. 1977, Doubleday. Debunks von Daniken and Velikovsky’s ideas, as well as the Sirius myth.

Morrison, David & Chapman, Clark “Catastrophism Gone Wild” in *Cosmic Catastrophes*. 1989, Plenum. Two noted astronomers examine our modern view of how impacts and other catastrophes have shaped the Earth, and, in the process, debunk Velikovsky’s ideas.

Oberg, J., et al. “The Velikovsky Affair” in *Skeptical Inquirer*, Fall 1980. An update and review following Velikovsky’s death.

Sagan, Carl “Venus and Dr. Velikovsky” in *Broca’s Brain*. 1979, Random House. A superb refutation of Velikovsky’s ideas.

Stiebing, William *Ancient Astronauts, Cosmic Collisions*. 1984, Prometheus. Examines Velikovsky’s claims.

Transcript of the 1974 AAAS Symposium:

<http://www.varchive.org/lec/aaas/transcripts.htm>

(A Velikovsky partisan offers a verbatim record of the session debating Velikovsky’s views that forms

the basis of the Goldsmith book, above. Note that Sagan's contribution was much expanded by the time it reached print.)

The Velikovsky Affair: <http://www.jerrypournelle.com/science/velikovsky.htm> Science fiction writer Pournelle offers commentary, background, and a nice essay by astronomer David Morrison entitled "Velikovsky at 50", which updates some of Sagan's 1974 arguments.

Antidote to Velikovskian Delusions:

<http://abob.libs.uga.edu/bobk/velidelu.html> Former Velikovsky disciple turned critic Leroy Ellenberger marshals the arguments against the worlds in collision proposals.

Ten 10 Reasons Velikovsky is Wrong:

<http://abob.libs.uga.edu/bobk/vdtopten.html> (Good summary of Ellenberger's arguments.)

Skeptical Dictionary: <http://skepdic.com/velikov.html>

8. Ancient Astronauts and Erich Von Daniken

A convicted Swiss embezzler (who wrote part of his best-selling *Chariots of the Gods* while in jail), Von Daniken claimed that there is a large amount of archaeological evidence that alien visitors helped us build many of the impressive artifacts that ancient civilizations left behind. (The insulting subtext here is that we needed the aliens' help because we humans were too stupid to build the Nazca lines or the pyramids by ourselves.) In fact, Von Daniken's books involve massive misinterpretations of archaeological data and a great deal of fabrication; the past, as the title of one the best debunking books vividly asserts, is human. Although his books are no longer as popular as they once were, his ideas have been incorporated into many new pseudo-science tracts and irresponsible television "pseudo-documentaries."

Stiebing, William *Ancient Astronauts, Cosmic Collisions*. 1984, Prometheus. A good skeptical introduction.

Story, Ronald *The Space Gods Revealed*. 1976, Harper & Row. Debunks Von Daniken's ideas.

Thiering, Barry & Castel, Edgar, eds. *Some Trust in Chariots*. 1975, Popular Library. Sixteen skeptical articles.

White, Peter *The Past is Human*. 1974, Taplinger. An

archaeological perspective on Von Daniken's inventions.

Feder, Kenneth *Frauds, Myths, and Mysteries: Science and Pseudoscience in Archaeology*. 2002, McGraw-Hill.

Nickell, J. "The Nazca Drawings Revisited" in *Skeptical Inquirer*, Spring 1983 (on the web at: http://www.csicop.org/si/show/nazca_drawings_revisited/)

Science or Charlatanism:

<http://www.debunker.com/texts/vondanik.html>

Robert Sheaffer's short article challenges a number of Von Daniken's claims.

The Real Erich Von Daniken:

http://www.channel4.com/history/microsites/R/real_lives/daniken.html A brief biography.

Skeptical Dictionary: <http://skepdic.com/vondanik.html>

9. Astronomical Aspects of Creationism and Intelligent Design

Fundamentalist religious thinkers (from a number of religions) have sought to deny the evidence from geology, astronomy, and evolutionary biology about the age and gradual development of the universe, the Earth, and its life-forms. (Recent creationist tactics have involved attacking the Big Bang theory and radioactive dating, for example.) Some groups have worked hard to get their own brand of "creation science" or "intelligent design" into the public schools and to undermine the teaching of *evolution*, one of the most fundamental and best-established ideas in modern science. The literature examining this controversy is enormous; the list below is merely a representative sampling, of particular interest to astronomy educators.

An Ancient Universe: How Astronomers Know the Vast Scale of Cosmic Time (from the Education Board of the American Astronomical Society):

<http://aas.org/education/ancientuniverse.php>

National Center for Science Education:

<http://www.ncseweb.org/> Best web site for keeping up with issues in this area, with many articles, resources, and links.

Scott, Eugenie *Evolution Versus Creationism*, 2nd ed. 2009, University of California Press. Excellent introduction to the key issues — scientific and political.

- Bobrowsky, M. "Teaching Evolutionary Processes to Skeptical Students" in *Physics Teacher*, Dec. 2000, p. 565. Includes a list of creationist arguments and science teacher responses.
- Bobrowsky, M. "Dealing with Disbelieving Students on Issues of Evolutionary Processes & Long Time Scales" *Astronomy Education Review*, vol. 4, #1, pp. 95: <http://dx.doi.org/10.3847/AER2005007>
- Morrison, D. "Only a Theory: Framing the Evolution/Creation Issue" in *Skeptical Inquirer*, Nov/Dec. 2005, p. 37. An astronomer comments on how scientists are ceding the field by not noting the use of language. (On the web at: http://www.csicop.org/si/show/only_a_theory_framing_the_evolution_creation_issue/)
- Hameed, S. "Bracing for Islamic Creationism" in *Science*, vol. 322, p. 1637 (12 Dec 2008). An astronomer warns of the rise of creationist ideas in Muslim countries and the need for education.
- Talk.Origins Archive: <http://www.talkorigins.org> (full of resources, discussions, links)
- Supernovae, Supernova Remnants, and Young Earth Creationism by Dave Moore: <http://www.talkorigins.org/faqs/supernova/> (How creationists misuse arguments about exploding stars.)
- Lawson, Kristan *Darwin and Evolution for Kids*. 2005, Chicago Review Press. An introduction to Darwin's life and key evolutionary idea, with a discussion of why creationist ideas are wrong.
- Pigliucci, Massimo *Denying Evolution: Creationism, Scientism, and the Nature of Science*. 2002, Sinauer Associates. A biologist gives the history of, explains, and refutes the various "brands" of creationism.
- Strahler, Arthur *Science and Earth History: The Evolution / Creation Controversy*. 1987, Prometheus Books. A discussion from the geologist's point of view, with lots of information about dating the Earth's rocks.
- Brush, S. "Finding the Age of the Earth by Physics or by Faith?" in *Journal of Geological Education*, 1982, vol. 30, pp. 34-58.
- Coyne, J. "The Faith That Dare Not Speak its Name: The Case Against Intelligent Design" in *The New Republic*, Aug. 22/29, 2005 issue (vol. 233, issue 4727/8, p. 21.) Superb layperson's introduction to the history/politics of intelligent design and a refutation of its arguments (by a biologist.)
- Dutch, S. "A Critique of Creationist Cosmology" in *Journal of Geological Education*, 1982, vol. 30, p. 27.
- Wilson, M. "Geology Confronts Creationism: An Undergraduate Science Curriculum" in *Skeptical Inquirer*, Jan/Feb. 2002, p. 52. A course for geology majors.
- The Age of the Earth: <http://www.talkorigins.org/faqs/faq-age-of-earth.html> This useful page from the Talk.Origins site describes how we measure the age of our planet and then dissects some of the common creationist arguments for a younger Earth.
- Changing Speed of Light Analysis: <http://www.talkorigins.org/faqs/c-decay.html> Addresses the creationist idea that the age of the universe could be a lot less than astronomers think if the speed of light has been getting a lot slower with time, so that light from distant objects wouldn't have had to leave them so long ago. A more technical site is: <http://homepage.mac.com/cygnusx1/cdecay/>

10. The "Great Moon Hoax": Did Astronauts Land on the Moon

A small group of "true believers" who claim that NASA never landed on the Moon got a big boost in 2001, when the Fox network broadcast a long paranoid show about their ideas. The web sites below provide a skeptical examination of this claim and the so-called evidence for it. From the many moon rocks brought back by the astronauts to the instruments they left on the Moon, there was always ample evidence that the moon landings actually happened. But in 2009, the Lunar Reconnaissance Orbiter took direct images showing the Apollo artifacts on the Moon, settling the issue for all except the most fervent "believers."

Phil Plait's response to "Moon Hoax":

<http://www.badastronomy.com/bad/tv/foxapollo.html>

Hoax Comments by astronomer Jim Scotti:

http://pirlwww.lpl.arizona.edu/~jscotti/NOT_faked/

Science at NASA discussion of hoax:

http://science.nasa.gov/science-news/science-at-nasa/2001/ast23feb_2/

Moon Base Clavius Site (a group effort at debunking):

<http://www.clavius.org/site.html> [note that you need to click on the small arrows at the bottom to get to the next pages]

Keel, W. “The Earth and Stars in the Lunar Sky” in *Skeptical Inquirer*, Jul/Aug. 2007, p. 47. The ultra-violet camera on Apollo 16 did record stars in the lunar sky and you can even identify them.

Plait, Phil “Appalled at Apollo” Chapter 17 of *Bad Astronomy*. 2002, Wiley. Good ammunition for debunking the notion that NASA never went to the Moon point by point.

Lunar Reconnaissance Orbiter Images:

http://www.nasa.gov/mission_pages/LRO/multimedia/lroimages/apollosites.html

http://www.nasa.gov/mission_pages/LRO/multimedia/lroimages/lroc_20090903_apollo12.html

11. On Nibiru and Doomsday 2012

The latest internet myth to gain traction is the notion that the world will experience a catastrophe on the winter solstice of 2012, either from collision with a (mythical) planet called Nibiru or from some other astronomical cause. A large number of books and websites have touted this notion for a while, as have documentaries on the History Channel, but in the summer of 2009, the producers of a major movie thriller, called “2012” began to spend quite a bit of money on “viral marketing” — even setting up fake website purporting to show the science behind the idea. Lots of people are worried and asking astronomers about this. NASA’s David Morrison has coined the term “cosmophobia” for the fear of astronomical disasters, and it appears that cosmophobia is significantly on the rise, despite the absence of any evidence.

David Morrison’s introduction to and debunking of 2012: <http://www.astrosociety.org/2012>

The Top 20 Questions about the Doomsday 2012 Myth (answered by David Morrison):

<http://astrobiology.nasa.gov/ask-an-astrobiologist/>

Morrison, David “The Myth of [the planet] Nibiru and the End of the World in 2012”:

http://www.csicop.org/si/show/myth_of_nibiru_and_the_end_of_the_world_in_2012/

Krupp, E. C. “The Great 2012 Scare” in *Sky & Telescope*, Nov. 2009, p. 22. Good introduction to the history

of such doomsday predictions.

2012 Hoax site (a well-executed, exhaustive examination of claims and counter-arguments by a group of professional and amateur astronomers):

<http://www.2012hoax.org/>

The Mayan Calendar Connection:

http://en.wikipedia.org/wiki/2012_doomsday_prediction

Planet X/Nibiru Cult Discussion by Phil Plait:

<http://www.badastronomy.com/bad/misc/planetx/>

Fraser Cain’s detailed critiques on the Universe Today website:

<http://www.universetoday.com/2008/05/19/no-doomsday-in-2012/> (and the further columns listed therein)

12. Miscellaneous Topics in Astronomical Pseudoscience

Phil Plait on Naming Stars for Money:

http://www.csicop.org/si/show/name_dropping_want_to_be_a_star/

Hale, A. “Hale-Bopp Comet Madness” in *Skeptical Inquirer*, Mar/Apr. 1997, p. 25. On a cult that saw a spaceship behind the comet:

http://www.csicop.org/si/show/hale-bopp_comet_madness/

Frazier, K. “Was the ‘Rare Earth’ Hypothesis Influenced by a Creationist?” in *Skeptical Inquirer*, Nov/Dec. 2001, p. 7. On the University of Washington astronomer who was secretly a creationist.

Meeus, J. “Planetary Groupings and the Millennium: Why Panic?” in *Sky & Telescope*, Aug. 1997, p. 60. Analyzes 40 so-called “alignments of the planets”.

Garwood, Christine *Flat Earth: The History of an Infamous Idea*. 2007, St. Martin’s Press. A nice history that includes 20th century groups that believed the Earth was flat.

Branham, R. “Did the Moon Sink the Titanic: Astrology, Lunar Phases, and Maritime Disasters” in *Skeptical Inquirer*, Jul/Aug. 1995, p. 30. Examination of over 1400 ship disasters to see if there was any astronomical connection.

Burnham, Robert *Great Comets*. 2000, Cambridge U. Press. Chapter 6 discusses the “Heaven’s Gate” affair (where cult members committed suicide) connected

with Comet Hale-Bopp.

Krupp, E. "Lost Worlds" in *Sky & Telescope*, Apr. 2000, p. 93. Debunks notion that earlier civilizations knew about Uranus, Neptune, or Pluto, long before they were discovered.

Krupp, E. "The Sphinx Blinks" in *Sky & Telescope*, Mar. 2001, p. 86. Examines some astronomical connections suggested for the Sphinx and the Pyramids and finds them wanting. (See also, *Sky & Telescope*, Feb. 1997, p. 64.)

Kusche, Lawrence *The Bermuda Triangle Mystery Solved*, 2nd ed. 1995, Prometheus. A librarian researches the extravagant claims about disasters in a small area of the Earth and finds little to support them.

Oberg, J. The Tungusca Event:
<http://www.jamesoberg.com/ufo/tungus.html>
(Analysis by science writer James Oberg from 1982, debunking the notion that the impact event in Siberia in 1908 was an alien spaceship.)

Olson, D. & Lytle, T. "Tidal Forces on May 5, 2000" in *Sky & Telescope*, May 2000, p. 109. Examines the effects of planetary alignments on the Sun in 2000 and through history.

Stenger, Victor *The Unconscious Quantum*. 1995, Prometheus. A physicist examines "new age" claims that quantum mechanical ideas underlie psychic powers or paranormal experiences.

Voss, D. "New Physics Finds a Haven at the Patent Office" in *Science*, 21 May 1999; (vol. 284, p. 1252.) Discusses how weird, new age physics is sneaking its way into U.S. patents.

© 2010 Andrew Fraknoi. The right to reproduce for any educational non-commercial purpose is hereby granted, as long as the author's name and institution are not deleted. For any other use, please contact the author at: [fraknoi {at} fhda {dot} edu](mailto:fraknoi@fhda.edu).

Published by the Astronomical Society of the Pacific
www.astrosociety.org