



## BOOK REVIEW

Reviewed by Sten Odenwald

### ***Bad Astronomy: Misconceptions and Misuses Revealed, from Astrology to the Moon Landing "Hoax"***

Philip Plait, John Wiley & Sons, New York, 2002, 277 pp., \$15.95.

In the new book *Bad Astronomy* (which is available from the ASP catalog and website), Philip Plait has done a wonderful job of reminding readers that many forms of misunderstanding abound whenever the casual observer thinks "astronomically." By touching upon the more classic and legendary examples of how we can be misinformed, Plait demonstrates that we can never lower our guard, not even at the dinner table.

Although those of you reading this review may be astronomically literate, it is unlikely that your immediate family and friends are as relentlessly rational about how they experience the physical world.

Plait, an astronomer at Sonoma State University in California and creator of the popular website [www.badastronomy.com](http://www.badastronomy.com), presents dozens of fallacies in clear and crisp prose that make for quick and compelling reading even at poolside. In fact, the examples are so entertaining and well explored that you can scarcely put the book down. By covering everything from the "Moon illusion" to creationism, he provides a nearly encyclopedic synopsis of the many ways in which the general public becomes misinformed about science and perception.

Virtually all of the astronomical examples come from the simple fact that no one bothers to become familiar with the sky anymore. We huddle indoors, leave our security lights on, and turn our backs on the grand view of the sky and its many transient phenomena. People see the occasional bolide streak across the sky and pound the online Ask the Astronomer services, asking about reentering satellites or Space Shuttles burning up. Those of us who have been fielding questions about astronomy on the web since 1995 are well acquainted with the all-too-frequent query about "photon belts from the Pleiades" or end-of-world scenarios.

What is troubling about public misinformation is that whenever you provide a rational explanation to someone, you have the creepy feeling that they don't really believe your explanation. It is simply too boring, it contradicts some core belief, or it conflicts with what they perceive is their unfailingly accurate observation of an unfamiliar event. Some people do trust their eyes and "hunches" more than they trust a distant astronomer who was not really "there" to see the event. *Bad Astronomy* is an excellent guide to some of the more egregious fallacies that nonscientists can fall victim to, and

how new fallacies like the Moon Landing "Hoax" (which was widely disseminated in an irresponsible Fox television program) can take root and grow seemingly at the speed of light.

Although the book points out in detail the many misconceptions about astronomical phenomena, I think it touches a bit too lightly on why these misconceptions persist despite strenuous scientific explanations and protestations. Are these misconceptions merely a by-product of the infamous U.S. scientific illiteracy that has been so dramatically documented in surveys by the National Science Foundation? Do people in other countries and cultures share the same misconceptions?

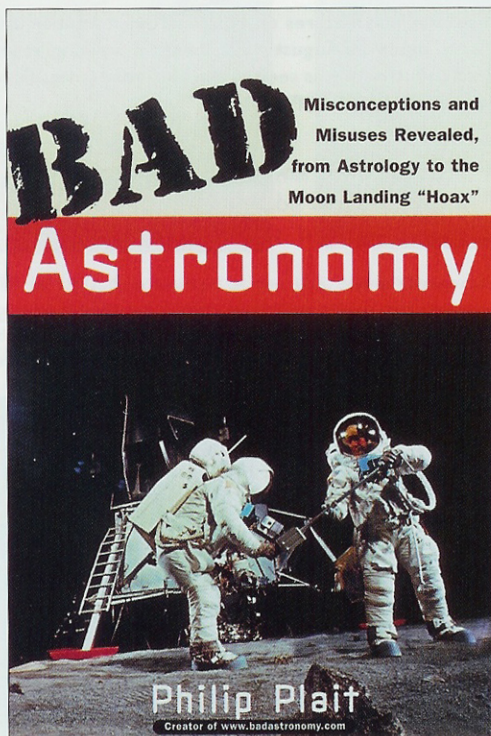
Misconceptions are often caused by eyewitness accounts and powerful tendencies to believe the unbelievable. A discussion of the legal status of eyewitness accounts in the judicial system, or a

discussion of the ways in which humans form beliefs, would have provided additional insight into the many examples given in the book. In most courts, eyewitness accounts are not accorded much weight, and many careful studies show that eyewitnesses are shockingly unreliable and "blindsighted" in reporting key elements of a crime.

The World Wide Web has evolved into a major source of public disinformation about astronomy. It might have been of some interest to the reader to see a chapter about "kooky ideas on the web," who is promulgating them, and to what purposes. A start in this direction was made in Plait's discussions of the Lunar Landing "Hoax" and the Creation "science" folks. Also, are there any examples of older misconceptions and "bad astronomy" that finally ran their course and are no longer "believed"? This kind of historical guide to past misconceptions could have provided us with a powerful perspective on how robust these ideas are and the hope that, like a bad

cold, they will eventually run their course after a few decades. For centuries people thought that the aurora borealis was Sun glints off of icebergs!

*Bad Astronomy* is more than a window onto silly ideas shared by millions of people. It is a Rosetta Stone that offers us a glimpse of how humans form lasting ideas and beliefs, even in the face of conflicting data. By focusing only on the various entertaining examples, and not on the brain-mind connections that make them so persistent, it seems that a bigger story has been left out. I look forward to Plait's integration of these ideas in his next book! **TM**



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