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Good Reading from Other Sources on Astronomy Education and Outreach (Published in 2006)

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Abstract

We present our second annotated listing of readings about astronomy education and outreach that appeared during the previous calendar year in places other than the *Astronomy Education Review*. To keep things manageable, we only cover readings directly related to astronomy—even though there are many articles about physics, geology, or chemistry education that could easily be applied to astronomy classrooms—and only contributions that are in journals and magazines (as opposed to newsletter or Web bulletins.) Suggestions for additions to the list are most welcome.

Papers and Articles on Astronomy Education

Blown, E., & Bryce, T. "Knowledge Restructuring in the Development of Children's Cosmologies" in *International Journal of Science Education*, vol. 28, no.12, pp. 1411–1462. How children's ideas about the motion and shape(s) of the Sun, Earth, Moon system change from young childhood to early adolescence.

Bruning, David. "What Is It We Teach?" in *Mercury* (the journal of the Astronomical Society of the Pacific), vol. 35, no. 1, p. 11 (Jan./Feb. 2006). Considers the importance of critical thinking in our astronomy courses.

Bruning, David. "What Do You Believe?" in *Mercury* (the journal of the Astronomical Society of the Pacific), vol. 35, no. 3, p. 11 (May/June 2006). Suggests that college instructors write out their teaching philosophies (learning outcomes).

Bryce, T., & Blown, E. "Cultural Mediations of Children's Cosmologies: A Longitudinal Study of the Astronomy Concepts of Chinese and New Zealand Children" in *International Journal of Science Education*, vol. 28, no.10, pp. 1113–1160. A study of 686 children and their ideas about the motion and

shape(s) of the Sun, Earth, Moon system.

DeJong, Marvin. "Using Tide Data in Introductory Classes" in *Physics Teacher*, vol. 44, no. 8, p. 504 (Nov. 2006). Using real NOAA data to show aspects of the tides.

DiCicco, Dennis. "Celestron's Sky Scout" in *Sky & Telescope*, vol. 112, no. 5, p. 72 (Nov. 2006). A hands-on review of a new tool for locating stars and nebulae, with educational implications.

Efthimiou, Costas, & Llewellyn, Ralph. "Avatars of Hollywood in Physical Science" in *Physics Teacher*, vol. 44, no. 1, p. 28 (Jan. 2006). On how science concepts, including several from astronomy, can be illustrated using popular films.

Gibbs, Michael. "Taking Steps to Make a Difference" in *Mercury* (the journal of the Astronomical Society of the Pacific), vol. 35, no. 5, p. 27 (Sep./Oct. 2006). About Project ASTRO (linking volunteer astronomers with fourth-to-ninth-grade teachers around the country) and a survey of its participants.

Hamilton, Thomas. "An Alternative to Term Papers for Astronomy Classes" in *The Planetarian* (the journal of the International Planetarium Society), vol. 35, no. 2, p. 9 (June 2006). Requiring reports on a planetarium visit and an observing session instead of a term paper.

Hurst, Anna. "Reincarnation of a Newsletter" in *Mercury* (the journal of the Astronomical Society of the Pacific), vol. 35, no. 5, p. 9 (Sep./Oct. 2006). On the national newsletter for teaching astronomy in Grades 3–12 at the Astronomical Society of the Pacific.

Jackson, Eric, & Rand, Larry. "A Space for Climbing and Learning" in *Mercury* (the journal of the Astronomical Society of the Pacific), vol. 35, no. 3, p. 32 (May/June 2006). Describes Pipehenge, a tool for having kids explore celestial phenomena and motions.

Kuo, Vince, & Beichner, Robert. "Stars of the Big Dipper: A 3-D Vector Activity" in *Physics Teacher*, vol. 44, no. 3, p. 168 (Mar. 2006). How to set up a computer program to show 3-D motion of stars.

Larson, Michelle, et al. "Science Icebreaker Activities: An Example from Gravitational Wave Astronomy" in *Physics Teacher*, vol. 44, no. 7, p. 416 (Oct. 2006). Matching data to idealized templates of gravity wave events.

LoPresto, Michael. "A Simplified Theoretical Treatment and Simulated Experimental Calculation of the Roche Limit" in *Physics Teacher*, vol. 44, no. 6, p. 381 (Sep. 2006). Finding the Roche Limit and using planetarium software to measure it.

McConnell, David, et al. "Using Conceptests to Assess and Improve Student Conceptual Understanding in Introductory Geoscience Courses" in *Journal of Geoscience Education*, vol. 54, no. 1, p. 61 (Jan. 2006). Our colleagues in geology are starting to set up concept inventories and tests similar to the ones being done in astronomy. This reports on their progress and on a Web site with sample questions, some of which we would consider astronomy.

McIntosh, Gordon. "A Simple Photometer to Study Skylight" in *Physics Teacher*, vol. 44, no. 8, p. 540 (Nov. 2006). Measuring the light scattered in the sky during the course of a day.

Montgomery, Michele. "Who Wants to be an Astronomaire--The Game" in *Physics Teacher*, vol. 44, no. 9, p. 607 (Dec. 2006). Playing a classroom game like "Who Wants to be a Millionaire," with hot seats and audience participation.

Mueller, Michael, & Valdenrama, Paige. "Crater Appeal" in *Science Teacher*, vol. 73, no. 5, p. 23 (Summer 2006). On the Mars Student Imaging Program.

Oostra, Benjamin. "Astronomy Teaching with Astronomical Catalogs" in *Physics Teacher*, vol. 44, no. 3, p. 153 (Mar. 2006). Using online catalogs for student projects; gives specific examples.

Rosendhal, Jeffrey. "Creating NASA's Space Science Education and Public Outreach Program: The Real Stuff" in *Mercury* (the journal of the Astronomical Society of the Pacific), vol. 35, no. 6, p. 20 (Nov./Dec. 2006). The history of the major expansion of investment in education by NASA's Office of Space Science, written by the astronomer who oversaw the effort.

Ruiz, Michael, & Abee, Jeremy. "Doppler Football" in *Physics Teacher*, vol. 44, no. 7, p. 440 (Oct. 2006). Instructions for making various balls with a buzzer inside to demonstrate the Doppler effect.

Sharp, John, & Kuerbis, Paul. "Children's Ideas About the Solar System and the Chaos in Learning Science" in *Science Education*, vol. 90, no. 1, p. 124 (Jan. 2006). Detailed interviews with 9–11-year-olds in England, some of whom had astronomy and some who did not.

Tretter, Thomas, et al. "Accuracy of Scale Conceptions in Science: Mental Maneuverings across Many Orders of Spatial Magnitude" in *Journal of Research in Science Teaching*, Vol. 43, no. 10, p. 1061 (Dec. 2006). How kids and adults organize objects into categories by size.

Trumper, Ricardo. "Teaching Future Teachers Basic Astronomy Concepts—Seasonal Changes—at a Time of Reform in Science Education" in *Journal of Research in Science Teaching*, vol. 43, no. 9, pp. 879–906. Experiment in which one classroom of preservice teachers conducted "constructivist" activities about the seasons, while a control classroom received traditional instruction.

Whitehorne, M. L., & Kelly, Don. "Education and Outreach Is Worth Doing" in *Journal of the Royal Astronomical Society of Canada*, vol. 100, p. 182 (2006). Based on an informal survey of Canadian teachers.

Zevin, Dan. "A Network Can Always Do Better" in *Mercury* (the journal of the Astronomical Society of the Pacific), vol. 35, no. 3, p. 9 (May/June 2006). Describes how the Project ASTRO regional sites work together training astronomers and teachers to be partners.

Papers or Articles on Astronomy Outreach

Faidit, Jean-Michel. "Planetariums in France" in *The Planetarian* (the journal of the International Planetarium Society), vol. 35, no. 3, p. 14 (Sep. 2006). Survey and history of fixed and portable planetariums in France between 1980 and the present.

Perhoniemi, T. "The Essence of the Planetarium in the Use of Pedagogy" in *The Planetarian* (the journal of the International Planetarium Society), vol. 35, no. 1, p. 16 (Mar. 2006). Tries to distill the educational essence of planetaria and set basic goals for what to teach with them.

Schomaker, William. "America's Stargazer" in *Astronomy*, vol. 34, no. 1, p. 88 (Jan. 2006). Profile of Jack Hokheimer, who does a short TV news show on astronomy.

Webb, M. "Now What Do They Want?" in *The Planetarian* (the journal of the International Planetarium Society), vol. 35, no. 2, p. 12 (June 2006). Reports on a project to analyze 618 questions asked by patrons at the Adler Planetarium over a four-week period.

A Book Related to Astronomy Education

Heck, Andre. *Organizations and Strategies in Astronomy*, vol. 7. 2006, Springer. Volume 343 in the Astrophysics and Space Science Library. Has a number of articles on communicating astronomy to the public.

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