

Astronomy Materials for Ages 5 to 8

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Materials for Children Ages 5 to 8
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Introduction

My project is a collection of astronomy books with an emphasis on the solar system and the changes in our understanding of Pluto. In the last decade Pluto has gone from being the ninth planet to the first of a new class of dwarf planets or "planetoids." This change began in 2005 with the discovery of Eris by Michael Brown of Caltech (deGrasse Tyson, N, 2011) and new astronomy books, especially for children, should reflect this change in our scientific understanding.

My selection includes a book of poetry about the recent solar system changes, a biography on Galileo and two books that look at folklore: the Chinese moon festival and the Greco/Roman stories behind the constellations. I have done my best to include a balanced mixture of books for the age ranges five to eight (kindergarten through third grade). There is some overlap in both directions so that the total age range is more like preschool through fifth grade.

The collection is designed for the children's wing of the Castro Valley branch of the Alameda County public library. Castro Valley is an unincorporated neighborhood that straddles the 580 between Hayward and the cities of Dublin and Pleasanton. According to the 2010 census the community has seen a seven percent increase in population in the last decade, now up to 61,388. The population is primarily Caucasian, Asian and Latino (US Census, 2011)

Nonfiction:

1. Fox, Karen C. *Older than the Stars*. Illustrated by Nancy Davis. Charlesbridge. 2010. 32 pages. Hardcover. ISBN: 1-57091-787-6

Older than the Stars introduces children to the big bang theory and its part in the creation of the universe, solar system and even life on Earth. The text is in two parts: an apparently handwritten typeface woven into the energetic illustrations that uses the "House that Jack Built" rhyming scheme to reinforce and reiterate each new concept, and a block of typed text that elaborates on the introduced concept. Children will learn about the universe, how stars and planets are formed and some basic theories behind chemistry.

- Patton, J. (2010). [Review of the book *Older Than the Stars* by Karen C. Fox]. *Library Media Connection*, 29(3), 99. Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=55822423&site=ehost-live>

2. Florian, Douglas *Comets, Stars, the Moon and Mars*. Harcourt. 2007. 45 pages. Hardcover. ISBN: 978-0-15-205372-7

The nineteen poems in Douglas Florian's *Comets, Stars, the Moon and Mars* introduces children to basic features of our solar system and larger features like the galaxy and the universe as a whole. Astronomy is also defined as something separate from space travel: "But none has ever gone to one, Nor will go to one soon" (p. 12). Pluto's poem explains its current status as a dwarf planet and its one time status as one of the planets of the solar system. Florian's collages bring together words and artwork (in the case of the planets named for gods) that highlight the characteristics of each celestial body, or the story behind their name. Sometimes the poems themselves take on the shape or form to best explain item described—a spiraling poem for the galaxies, for instance.

- Books, Multimedia, and Web Sites: [Review of the book *Comets, Stars, the Moon, and Mars: Space Poems and Paintings* by Douglas Florin]. (2007). *School Library Journal*, 53(37). Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=27081881&site=ehost-live>

3. Loewen, Nancy. *Seeing Red: the Planet Mars* Illustrated by Jeff Yesh. Picture Window Books. 2008. 24 p. Hardcover. \$19.49. ISBN: 1-40483-953-4

In an age when photographs from space are readily available for use in astronomy books, *Seeing Red* by Nancy Loewen uses the vector graphic illustrations of Jeff Yesh to set itself apart. Yesh's

analogous pallet fits perfect with this book about Mars, known for its red color. The book covers the basics: where the planet is, the fact it has seasons, Martian days and years, relative size compared to the Earth, the Martian moons and recent unmanned missions to the planet.

Phelan, C. (2008). [Review of the the book *Seeing Red: The Planet Mars*]. *Booklist*, 104(15), 87. Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=31753051&site=ehost-live>

4. Mitton, Jacqueline. *Once Upon a Starry Night*. Illustrated by Christina Balit. The National Geographic Society. 2003. 26 p. Hardcover. \$14.40. ISBN: 0-7922-6332-4

As the follow up to *Zoo in the Sky*, *Once Upon a Starry Night* introduces children to ten Greco-Roman myths and their corresponding constellations. Brief descriptions of each myth give children the basic information and can serve as a starting point for further reading. Adults reading aloud should practice the Greek and Latin names as no pronunciation guide is provided. Christina Balit's paintings mimic the Roman mosaics and are large enough to be seen and enjoyed during story time. The illustrations include the stars placements in the constellation and can be compared to a star map. There are examples from both hemispheres and a more comprehensive sky chart on the endpapers.

Jones, T. E., Toth, L., Charnizon, M., Grabarek, D., Larkins, J., & Ratterree, D. (2004). [Review of the book *Once upon a starry night: A book of constellations* by Jacqueline Mitton and Christina Balit] *School Library Journal*, 50(1), 120. Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=11933353&site=ehost-live>

5. Simon, Seymour. *Planets Around the Sun*. (SeeMore Readers Level 1). Sea Star Books. 2002. 32 p. Hardcover. \$11.86. ISBN: 1-58717-145-7

Planets Around the Sun by Seymour Simon uses photographs from the National Space Data Center and large white text against a black background to give the experience of seeing the planets and other heavenly bodies first hand. Along with covering the planets, it includes the moon, a more general discussion of the difference between moons and planets, and a page on asteroids. The page on Pluto though is out of date but does mention the debate between planet and dwarf planet status. The book ends with a useful chart of basic planet facts: distance from the sun, average temperature, whether or not it has rings, orbital period and number of moons.

Lahana, L., Jones, T. E., Toth, L., Charnizon, M., Grabarek, D., & Larkins, J. (2002). [Review of the book *Planets Around the Sun* by Seymour Simon]. *School Library Journal*, 48(6), 126. Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=6743996&site=ehost-live>

56. Sís, Peter. *Starry Messenger*. Farrar, Straus, Giroux. 1996. 33 p. Hardcover. \$15.30. ISBN: 0-374-37191-1

Galileo Galilei spent his life studying the skies, writing his observations in a notebook he called "The Starry Messenger." He worked with then cutting edge technology, the telescope, to make observations supporting Copernicus's theory that the earth and planets revolve around the sun. Peter Sís's text focus mostly on Galileo's life and less on his work in astronomy, mathematics or physics. It does though mention his trial for heresy and eventual house arrest. Sís's pen and ink drawings done in the style of star charts mimic Renaissance sketches, fitting perfectly with the time period of Galileo's life. The sidebar includes further information about the astronomer's life and research but is written in the style of Galileo's own handwriting, making it difficult to read at the same time the story is being read aloud to students. Those sidebars should be read ahead of time and notes taken that can be referred to as the book is being presented. By including information on Galileo's trial, children learn that scientific study can involve risks but is still worth the effort, even if the pardon comes after one's death.

R., S. (1997). [Review of the book *Starry Messenger: Galileo Galilei*. by Peter Sís]. *Horn Book Magazine*, 73(1), 79-80. Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=9701176802&site=ehost-live>

Picture Books:

7. Gay, Marie-Louise. *Stella: Princess of the Sky*. Douglas & McIntyre. 2004. 32 pages. Hardcover. \$13.56. ISBN: 0-88899-601-2

A conversation between Stella and her brother, Sam about how the sky changes at night inspires the children to spend the evening camping under the stars. They observe the sky above and the animals around them. They talk about the sun, the moon, stars, the Milky Way and the constellations. The illustrations capture the changing colors of the night: pastel oranges and pinks at sunset, deepening purples to blues as it gets later and brilliant whites for the stars. The question and answer approach of Sam and Stella's conversation can inspire children and parents to make their own observations about what they see and hear at night time.

Jones, T. E., Toth, L., Charnizon, M., Grabarek, D., Larkins, J., & Kropp, L. (2004). [Review of the book *Stella, Princess of the Sky* by Marie-Louise Gay]. *School Library Journal*, 50(10), 113-114. Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=14695049&site=ehost-live>

8. Henkes, Kevin. *Kitten's First Full Moon*. Greenwillow Books. 2004. 32 p. Hardcover. \$16.89 ISBN: 0-06-058829-2

Kitten sees the her first full moon and mistakes it for a bowl of milk. Henkes's black and white illustrations capture the feline's wide range of emotions from curiosity to frustration. The book asks children to think about the night time sky and ask what the moon might actually be.

- Leggat, P., & Metzger, S. (2004). Kitten's First Full Moon (Book). *Scholastic Parent & Child*, 12(1), 16. Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=14379648&site=ehost-live>

9. Lundebræk, Amy. *Under the Night Sky*. Tilbury House. 2008. 32 pages. Hardcover. \$15.80. ISBN: 0-88448-297-9

A boy who spends his nights alone while his mother works in the factory is woken up by her when she has a surprise. The sky is bursting with colors; it's an unexpected appearance of the aurora borealis. Mother and son join up with the rest of the neighborhood for the experience. It shows that astronomy can be for anyone and everyone. Nature is there and wonderful for anyone who takes the time away from the daily (or nightly) routine to look and enjoy.

- Simpson, M. (2008). [Review of the book *Under the Night Sky*]. *School Library Journal*, 54(8), 97. Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=33771059&site=ehost-live>

10. Thompson, Lauren. *Polar Bear Night*. Illustrated by Stephen Savage. Scholastic Press. 2008. 32 pages. Hardcover. \$14.44 ISBN: 0-439-49524-5

A polar cub explores around his den at night. He sees different animals asleep and notices that the moon is following him. Later he sees a meteor shower and the aurora borealis. Savage uses simple shapes in blue and white to build a cold snowy scene. Children will learn about parallax and the aurora borealis.

- Mattson, J. (2004). [Review of the book *Polar Bear Night* by Lauren Thompson]. *Booklist*, 101(6), 585. Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=15235924&site=ehost-live>

11. Williams, Brenda. *Lin Yi's Lantern: A Moon Festival Tale*. Illustrated by Benjamin Lacombe. Barefoot Books. (2009). 32 pages. \$14.44. ISBN: 1-84686-147-0

Set in rural China on the eve of the Moon Festival, Lin Yi is sent to the village to purchase items for the holiday: moon cakes, star fruit, rice and peanuts. If he haggles well enough he might have enough money left over to buy a rabbit lantern. Besides having a story about planning for the Moon Festival, the book includes a retelling of the Moon Fairy myth and a description of what life is like in rural China. These extras help put the story into perspective for children living in other parts of the world. Lacombe's gouache paintings use a lot of red, a lucky color in Chinese culture.

McGillicuddy, M. (2010). Lin Yi's Lantern: A Moon Festival Tale. *School Library Journal*, 56(1), 84. Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=47392131&site=ehost-live>

Chapter Book:

12. Kline, Suzy. *Horrible Harry Goes to the Moon*. Illustrated by Frank Remkiewicz. Viking. 2000. 51 pages. Hardcover. \$11.89. ISBN: 0-670-88764-1

An argument over who gets to sit on the moon patterned couch starts a class-wide research project on the moon. The students learn about the lower gravity on the moon by doing a hopping experiment. Harry decides the class needs to go to the moon. Since getting a field trip in a rocket isn't possible, he convinces the class to hold a bake sale to purchase a used telescope. To celebrate their success, the children host a moon viewing party. The book introduces students to recent research into there being water (in the form of ice) on the moon. It also has information on the geography of the lunar landscape and what can be seen through a telescope.

Leach, P., Jones, T. E., Toth, L., Auerbach, B., & Leiboff, J. (2000). Preschool to Grade 4: Fiction. *School Library Journal*, 46(2), 96. Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=2810518&site=ehost-live>

Media:

13. Lenglen, J. M. (producer) (2006). Studying the solar system [DVD title]. In Lenglen, J. M. (producer) *Space Exploration: Adi in Space*. Wynnewood, PA: Schlessinger Media.

The video has good information on the sun, the speed of light and the solar system. It uses a combination of computer graphics (in the form of an alien host and his talking pet) and film footage. The information on Pluto doesn't include its current status as a dwarf planet but it does discuss the foundation behind the debate over its eventual change in status. The voice actors are British and some of terminology is a little different.

Bateman, T. (2006). [Review of the DVD series: *Space Exploration: Adi in Space*]. *School Library Journal*, 52(9), 66. Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=22324212&site=ehost-live>

14. Cole, Joanna. *The Magic School Bus Lost in the Solar System*. Illustrated by Bruce Degen. Scholastic Audio. 2010.

Arnold's cousin Janet visits on the day that the class is scheduled to take a field trip to the local planetarium. Janet who likes to be the best at everything doesn't make any friends at first when she brags about everything being better at her school. Mrs. Frizzle's class has more to think about than just Janet when the bus unexpectedly blasts them into space! They end up taking a tour of the solar system from the eight planets, the asteroid belt between Mars and Jupiter and even out to Pluto and Charon. The audio CD is set up with two tracks: a read along version that includes page turning reminders and a version that is just the audio play version of the book. The students' reports which are included in the book as sidebars are read at the end of the audio track by Mrs. Frizzle once the students have returned to school. The audio book explains at the start that things are read out of order to make things easier to follow when being listened to. The information on the solar system, including Pluto, is up to date.

Verbrugge, J. (2011). [Review of the audio book *The Magic School Bus: Lost in the Solar System* by Joanna Cole]. *School Library Journal* 57(1), 62. Review located using Academic Search Premier database at persistent URL:

<http://libaccess.sjlibrary.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=57053855&site=ehost-live>

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deGrasse Tyson (2011, February 03). Astronomy: The planet that never was. *Nature* 470. 34-35. doi:10.1038/470034a. Retrieved from <http://www.nature.com.libaccess.sjlibrary.org/nature/journal/v470/n7332/full/470034a.html> and accessed March 12, 2011.

U.S. Census (2011). Cited in Mills, D. (2011, March 8). Castro Valley population grows 7 percent. *Castro Valley Patch* [website] Available at <http://castrovalley.patch.com/articles/castro-valley-population-edges-up-7-percent> and accessed March 12, 2011.