

Families' Guide to Solar System Exploration: *The Dawn Mission to the Asteroid Ceres*

Explore Asteroids and the Solar System at Home!

Use the information and resources below to explore the solar system – including the Dawn mission to Ceres – with your child(ren). Start with some common household materials and create some craters! Celebrate the solar system and the Dawn mission by investigating websites and reading books together. See if any events are happening in your neighborhood through your local museum, planetarium, observatory, or astronomical club that you and your family can attend. Finally, watch for news stories to talk about with your child(ren).

Why Explore the Solar System?

Interest in the stars and planets has been both a common and consistent characteristic of humanity. We are driven to explore what we don't know, discover new things, push the boundaries of our limits, and beyond. For now, humans must stay close to Earth when exploring space. Until the day humans can routinely visit other planets, we must rely on robotic spacecraft to be our eyes throughout the solar system. Exploring the solar system is not easy and individual missions do not last forever. At some point, all missions must come to an end. However, in the human spirit of exploration, we should always look forward, ready to explore farther.

Exploring Asteroids with Dawn

Dawn delves into the unknown, drives new technology innovations, and achieves what's never been attempted before. Dawn has orbited the asteroid Vesta and, beginning in March 2015, will explore a second new world, Ceres, the solar system's largest asteroid. Dawn's goal is to characterize the conditions and processes of the solar system's earliest history by investigating in detail two of the largest asteroids remaining intact and relatively unchanged since their formation. Dawn's investigations of Ceres and Vesta take us back in time to when the solar system was very young.

Upcoming Events

Find information and resources about upcoming celestial events and NASA mission milestones to share with your child(ren) at http://www.lpi.usra.edu/education/look_up.

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Why Explore Science with your Child?

- Children are naturally curious about their world and science encourages continued curiosity and a deeper appreciation for nature.
- Science helps children develop critical thinking skills that can help them perform better in school, have more diverse job opportunities, and become better informed consumers and citizens.
- Science strengthens communication skills.

You are the most important role model your child(ren) have! By actively making science a part of family life, you send the message that science is important. Plus, participating in science doesn't require knowledge of math and science. It only takes curiosity, an interest in learning, talking about it, and having some fun together!

Crater Creations

Like the Earth's Moon, the surface of Mercury is scarred with impact craters. This activity explores how craters form on solid surfaces throughout the solar system.

<http://www.lpi.usra.edu/education/explore/LRO/activities/craterCreations/index.shtml>

Selected Books About Asteroids

Exploring Dangers in Space: Asteroids, Space Junk, and More

Buffy Silverman, Learner Publishing Group, Inc., 2012, ISBN 9780761354468

This book discusses space collisions, from the asteroids and comets that strike Earth and other planets to the work scientists are doing to protect our planet. For ages 7–12.

Space Leftovers: A Book About Comets, Asteroids, and Meteoroids

Dana Meachen Rau, Picture Window Books, 2005, ISBN 9781404811379

This book describes comets, asteroids, and meteoroids, and how they impact Earth. Includes an activity. For ages 5-10.

Night Sky Viewing Events

Contact your local astronomy club or observatory to view the night sky through telescopes! Viewing planets through telescopes will give your child(ren) a personal connection with the very same objects being visited by spacecraft. You can find your local astronomy club through NASA's Night Sky Network: <http://nightsky.jpl.nasa.gov/clubs-and-events.cfm>

Websites

NASA's Dawn Mission
<http://dawn.jpl.nasa.gov/>

Asteroids: An Overview
<http://solarsystem.nasa.gov/planets/profile.cfm?Object=Asteroids>

Dwarf Planets: An Overview (Ceres)
<http://solarsystem.nasa.gov/planets/profile.cfm?Object=Dwarf>

NASA Solar System Exploration
<http://solarsystem.nasa.gov/index.cfm>

Eyes on the Solar System
<http://eyes.nasa.gov/index.html>

Exploration Stories: Scientists' Favorite Historical Moments
<http://solarsystem.nasa.gov/50th/stories.cfm>