HANDS-ON ACTIVITIES FOR EXPLORING THE SOLAR SYSTEM IN K-14 FORMAL EDUCATION AND INFORMAL SETTINGS. J. S. Allen[1], K. W. Tobola[2], and K. Stocco[3], [1]Lockheed Martin, 2400 NASA Rd. 1, Houston, TX 77058, Jaclyn.allen1@jsc.nasa.gov, [2]Bastion Tech, 17625 El Camino Real, Suite 330, Houston, TX 77058, kay.w.toboal1@jsc.nasa.gov, [3]Sam Rayburn High School, 2121 Cherrybrook Ln, Pasadena, TX 77502.

Introduction: Activities developed by NASA scientists and teachers focus on integrating Planetary Science activities with existing Earth science, math, and language arts curriculum. Educators may choose activities that fit a particular concept or theme within their curriculum from activities that highlight missions and research pertaining to exploring the solar system. Most of the activities use simple, inexpensive techniques that help students understand the how and why of what scientists are learning about comets, asteroids, meteorites, moons and planets. The web sites for the activities contain current information so students experience recent mission information such as data from Mars rovers or the status of Stardust sample return.

The Johnson Space Center ARES Education team has compiled a variety of NASA solar system activities to produce an annotated thematic syllabus useful to classroom educators and informal educators as they teach space science. An important aspect of the syllabus is that it highlights appropriate science content information and key science and math concepts so educators can easily identify activities that will enhance curriculum development. The outline contains URLs for the activities and NASA educator guides as well as links to NASA mission science and technology.

In the informal setting, educators can use solar system exploration activities to reinforce learning in association with thematic displays, planetarium programs, youth group gatherings, or community events. In both the informal and the primary education levels the activities are appropriately designed to excite interest, arouse curiosity and easily take the participants from pre-awareness to the awareness stage. Middle school educators will find activities that enhance thematic science and encourage students to think about the scientific process of investigation. Some of the activities offered may easily be adapted for the upper levels of high school and early college, as they require students to use and analyze data.

Syllabus Format: The Exploring the Solar System Syllabus of Activities starts with a variety of solar system scale activities that fit different settings and equipment. The early solar system formation activities are focused on asteroids, meteorites and planet formation. The theme of how and why we explore our solar system encompasses activities that engage the language and creative arts. Further activities highlight the Sun and planetary geology. Current Cassini and Genesis mission activities have been tested and added. A key aspect of the usefulness of the syllabus is that it provides easy access to solar system content, activities, related links and the thematic context for the classroom teacher or group leader.

Conclusion: The Exploring the Solar System Syllabus of Activities is a concentrated resource of activities and links that allows educators to comfortably and inexpensively share the excitement and science of solar system exploration with students and members of the public.

Additional Information: Some of the activities included in the Exploring the Solar System Syllabus of Activities are in the following NASA developed guides.

Exploring Meteorite Mysteries
http://ares.jsc.nasa.gov/Education/Activities/ExpMetMys/ExpmetMys.htm

Exploring the Moon
http://ares.jsc.nasa.gov/Education/activities/ExpMoon/ExpMoon.htm

Mars Activity Book: K-12 Classroom Activities
http://mars.jpl.nasa.gov/classroom

Destination: Mars
http://ares.jsc.nasa.gov/Education/activities/destmars/destmars.htm

Modeling the Solar System
http://ares.jsc.nasa.gov/Education/modelingsolarsystem.pdf

Fingerprints of Life
http://ares.jsc.nasa.gov/Education/Websites/AstrobiologyEducation/index.html