

***Science on Saturday***  
***Sciences Standards***  
***Lawrence Livermore National Laboratory***  
***November 15, 2008***

**“A Tale of a Comet's Tail: Clues to the Origin  
of our Solar System”**

**Presenters:**

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**Science Content Standards covered in this presentation:**

Grades Nine Through Twelve, Earth Sciences, Earth's Place in the Universe

1. Astronomy and planetary exploration reveal the solar system's structure, scale, and change over time.

As a basis for understanding this concept:

- a. *Students know* how the differences and similarities among the sun, the terrestrial planets, and the gas planets may have been established during the formation of the solar system.
- b. *Students know* the evidence from Earth and moon rocks indicates that the solar system was formed from a nebular cloud of dust and gas approximately 4.6 billion years ago.
- c. *Students know* the evidence from geological studies of Earth and other planets suggest that the early Earth was very different from Earth today.
- f. *Students know* the evidence for the dramatic effects that asteroid impacts have had in shaping the surface of planets and their moons and in mass extinctions of life on Earth.