SOLAR SYSTEM

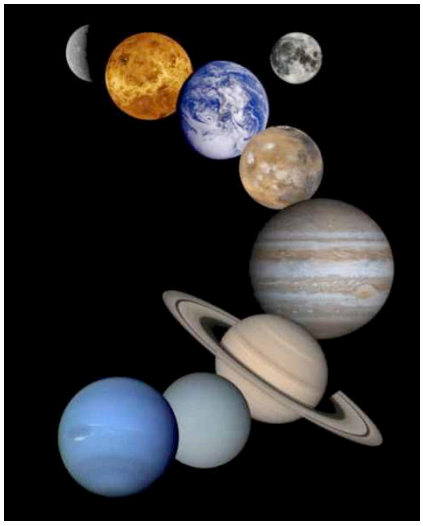
1. **DESCRIPTION**: This event will address the Sun, planets and their satellites, dwarf planets, comets, asteroids, the asteroid belt, meteoroids, Oort Cloud and the Kuiper Belt.

   A TEAM OF UP TO: 2 **APPROXIMATE TIME**: 50 Minutes

2. **EVENT PARAMETERS:** Each team may bring **two** 8.5" x 11" two-sided pages of notes that contain information in any form from any source, plus a non-programmable calculator with a square root function.

3. **THE COMPETITION**: Participants will be presented with one or more tasks, each requiring the use of one or more process skills. Skills may include, but are not limited to, generating inferences, making predictions, problem solving, making and recording observations, formulating and evaluating hypotheses, interpreting data, and graphing. The exam may be presented using a thematic approach.

   The questions will be chosen from the following topics:

   a. History and formation of the solar system
   b. Sun, 8 planets, 5 dwarf planets, **natural** satellites
   c. Asteroids, meteoroids, comets
   d. Asteroid belt, Oort Cloud, Kuiper belt
   e. Solar features including prominences, flares, sunspots, layers, etc.
   f. The Sun's evolutionary stages including past, present, and future
   g. Geologic activities, both past and present, of the planets and their satellites
   h. Characteristics of terrestrial and **gaseous** planets and their satellites including atmospheres, densities, seasons, climates, and ring systems
   i. Auroras, **magnetic fields**, meteors, meteor showers and crater-producing events
   j. Seasons, tides, lunar and solar eclipses, lunar and planetary phases
   k. Planetary motions including rotation, revolution, and precession
   l. Kepler's Laws of Planetary Motion and Newton's Laws of Motion and Gravitational Attraction
   m. Effects of planets and their satellites upon each other, e.g., tidal locking, shepherding, resonance and phases
   n. **Interpretation of planetary and satellite surface and atmospheric features**

4. **REPRESENTATIVE ACTIVITY:** Participants will attempt to identify and to place in sequential order the series of events in the geologic history of one or more small areas on the surface of a planet or satellite.

5. **SCORING**: Points will be awarded for the quality and accuracy of responses. Several questions will be preselected as tiebreakers.

Recommended Resources: All reference and training resources including the **Audubon Field Guide to the Night Sky** and the **Bio/Earth CD** are available on the Official Science Olympiad Store or Website at http://www.soinc.org