

# Astronomy Merit Badge Prework

## Hidden Oaks Nature Center

The Astronomy merit badge is a 4 hour session. Scouts should bring a snack and plenty of water. Please no red liquids. Scouts will be spending some of the session outside. Please have them wear sunscreen and insect repellent.

What to bring:

- Blue card, pen and pencil.
- Appropriate clothing including closed toe shoes.
- Snack and water.
- Prework.

### Prework

5. Do the following:

- a. List the names of the five most visible planets. Explain which ones can appear in phases similar to lunar phases and which ones cannot, and explain why.
- b. Using the Internet (with your parent's permission), books, and other resources, find out when each of the five most visible planets that you identified in requirement 5a will be observable in the evening sky during the next 12 months. Then compile this information in the form of a chart or table.

6. Do the following:

- b. Sketch the phase and the daily position of the Moon, at the same hour and place, for four days in a row. Include landmarks on the horizon such as hills, trees, and buildings. Explain the changes you observe.

8. With your counselor's approval and guidance, do ONE of the following:

- a. Visit a planetarium or astronomical observatory. Submit a written report, a scrapbook, or a video presentation afterward to your counselor that includes the following information:
    1. Activities occurring there
    2. Exhibits and displays you saw
    3. Telescopes and other instruments being used
    4. Celestial objects you observed
  
  - e. Personally take a series of photographs or digital images of the movement of the Moon, a planet, an asteroid, meteor, or a comet. In your visual display, label each image and include the date and time it was taken. Show all positions on a star chart or map. Show your display at school or at a troop meeting. Explain the changes you observed.
9. Find out about three career opportunities in astronomy. Pick one and find out the education, training, and experience required for this profession. Discuss this with your counselor, and explain why this profession might interest you.

For help or questions, contact Emily Cole at [Emily.cole@fairfaxcounty.gov](mailto:Emily.cole@fairfaxcounty.gov), or at (703) 941-1065.