



# Astronomy Merit Badge

Scout's Name: \_\_\_\_\_

Unit: \_\_\_\_\_

District: \_\_\_\_\_

Session: \_\_\_\_\_ Year \_\_\_\_\_

4. Do the following:

(a) Identify in the sky at least 10 constellations, at least four of which are in the zodiac.

_____	_____
_____	_____
_____	_____
_____	_____

(h) Identify at least eight conspicuous stars, five of which are of magnitude 1 or brighter.

_____	_____
_____	_____
_____	_____
_____	_____

(c) Make two sketches of the Big Dipper. In one sketch, show the Big Dipper's orientation in the early evening sky. In another sketch, show its position several hours later. In both sketches, show the North Star and the horizon. Record the date and time each sketch was made.

Date: ___/___/___ Time: _____	Date: ___/___/___ Time: _____

(d) Explain what we see when we look at the Milky Way. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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.

Five Most Visible Planets   Phases?   Why?

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(b) 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. Update your chart monthly to show whether each planet will be visible during the early morning or in the evening sky.

Month	Jupiter	Mars	Mercury	Saturn	Venus

6. At approximately weekly intervals, sketch the position of Venus, Mars, or Jupiter in relation to the stars. Do this for at least four weeks and at the same time of night. On your sketch, record the date and time next to the planet's position.

Date: ___/___/___ Time: _____	Date: ___/___/___ Time: _____	Date: ___/___/___ Time: _____	Date: ___/___/___ Time: _____

Use your sketch to explain how planets move. \_\_\_\_\_

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7. Do the following:

(a) Sketch the face of the Moon and indicate at least five seas and five craters. Label these landmarks.

(b) Sketch the phase and the daily position of the Moon, at the same hour and place, for a week. Include landmarks on the horizon such as hills, trees, and buildings.

Date: __/__/__ Time: _____	Date: __/__/__ Time: _____	Date: __/__/__ Time: _____
Date: __/__/__ Time: _____	Date: __/__/__ Time: _____	Date: __/__/__ Time: _____

Explain the changes you observe. \_\_\_\_\_

(c) List the factors that keep the Moon in orbit around Earth. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(d) With the aid of diagrams, explain the relative positions of the Sun, Earth, and the Moon at the times of lunar and solar eclipses, and at the times of new, first-quarter, full, and last-quarter phases of the Moon.

