



# Royal Rangers

Merit Requirements: **Blue-Bordered Merit**

## **ASTRONOMY**

1. Define astronomy and name two important astronomers.
2. Explain the major differences between the following: planets, moons, stars, comets, asteroids, meteoroids, solar systems, and galaxies.
3. Find one interesting fact about each planet in our solar system. Draw a chart or make a display showing their differences in size and distance from the sun.
4. Explain what is meant by light-year. Give the distance in light-years to the nearest star and the estimated distance to the farthest galaxy.
5. Explain the difference between an asterism and a constellation.
6. Do ONE of the following:
  - a. Find a total of at least five asterisms and/or constellations in the sky.
  - b. Visit a planetarium or observatory.
7. Explain why the stars seem to twinkle and why the North Star is important in finding directions in the northern hemisphere.
8. Sketch the moon's position in the sky on three different nights during a one-week period. On one of those nights sketch its position once an hour for three hours. Answer these questions:
  - a. Did you observe a change in the moon's position from night to night and hour to hour?
  - b. What direction does the moon travel?
  - c. What causes the moon to have different shapes, called phases?
  - d. What causes the moon to "move" in the sky during the night?
9. Do ONE of the following:
  - a. With a small telescope or binoculars, study the moon, stars, and planets on three different nights. Keep notes to compare what you observe each night when identifying each object.
  - b. With the aid of an astronomy book, star chart, or web site, make drawings of the northern and southern skies as they look for the current season of the year, with at least five major constellations placed in their proper positions.
10. Give three Scripture references regarding the stars, moon, planets, sun, constellations, etc.