
Exercise G1: Our Home Galaxy, the Milky Way

Student name: _____ Class: _____ Date: _____

Check the box with the correct answer.

Question 1: Which of the following statements describes the position of the Sun and Solar System within the Milky Way?

- a. The Sun and Solar System are located at the center of the galaxy.
- b. The Sun and Solar System are located on the outer edge of the galaxy.
- c. The Sun and Solar System are not part of the Milky Way.
- d. The Sun and Solar System are located about two thirds of the way from the center to the edge of the galaxy.

Question 2: The Sun is located _____ light years from the center of the Milky Way galaxy.

- a. 52,000 light years
- b. 26,000 light years
- c. 13,000 light years
- d. 6,000 light years

Question 3: The Sun is moving with a velocity of about 220 km/sec in its orbit about the galactic center.

Using your answer from Question 2, what is the approximate time required for the Sun (and the entire Solar System) to complete one orbit of the galactic center?

- a. 115 million years
- b. 230 million years
- c. 10 billion years
- d. 460 million years

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Question 4: The Milky Way appears as an irregular band of diffuse light that arches across the night sky.

Why is this so?

- a. The stars of the galaxy are low mass stars, so they are intrinsically very faint.
- b. Most of the stars of the galaxy are so distant that their total light is blended together into a faint band.
- c. The band of the Milky Way is comprised of dimly glowing interstellar gas clouds.
- d. The band of the Milky Way is external to the galaxy.

Question 5: The Solar System is embedded within the galaxy. Why does the Milky Way appear as a narrow band of light instead of appearing as faint but evenly distributed light across the entire sky?

- a. The galaxy is flattened and we view it edge on, from its interior.
- b. We can only see stars in the galaxy that lie on the galactic plane.
- c. The galactic disc is composed exclusively of intrinsically dim stars.
- d. All of the Milky Way except the central plane is obscured from view by interstellar dust.

Question 6: Which of these statements most accurately describes the situation of the Solar System within the galaxy?

- a. The planes of the galaxy and the Solar System are coincident and parallel.
- b. The plane of the Solar System is perpendicular to that of the Milky Way.
- c. The Solar System does not have a plane.
- d. The plane of the Solar System is inclined with respect to the galactic plane.

Question 7: This is gamma ray view of the galaxy. In what constellation is a gamma ray “hot spot” found, that could be associated with a super massive black hole?

- a. Ara
- b. Norma
- c. Sagittarius
- d. Corona Australis

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Question 8: Does the gamma ray hot spot appear to lie in the direction of the center of the Milky Way?

- a. No
- b. Yes