

Large Magellanic Cloud Reading Comprehension

Name _____

While the Large Magellanic Cloud may look like a faint, barely-visible cloud in the Southern Hemisphere, it is actually one of the closest galaxies to earth. Just 163,000 light years away, this satellite dwarf galaxy of the Milky Way was named for explorer Ferdinand Magellan. In 1519, Magellan and his crew became the first to sail all the way around the world. Throughout the voyage, Magellan's crew took detailed notes on all of the phenomena they observed and brought that knowledge back to Europe upon their return.

The Large Magellanic Cloud is an irregular galaxy, as it lacks any distinct structure. Most galaxies, including the Milky Way, take on a common shape like a spiral or ellipse, but not this galaxy. The Milky Way might be responsible for altering the Cloud's shape due to its gravitational attraction. The Cloud is one of dozens of galaxies that are part of a category known as the Local Group, encompassing the galaxies that are closest to the Milky Way and therefore easier for scientists to observe and study in detail rather than making predictions and theories. Due to the Cloud's close proximity, astronomers were able to deduce that it makes one rotation every 250 million years.

One of the Large Magellanic Cloud's most significant features is a site within it rife with gas and dust. This area is a common birth site for stars, as gas clouds frequently come together and collapse to form them and light up in different colors that NASA can observe with its powerful telescopes. In a specific part of the Cloud known as the Tarantula Nebula—the most active star-forming region in the Local Group—the Hubble, Chandra, and Spitzer telescopes revealed high levels of radiation and violence, indicating that thousands of stars were releasing material in that area.

The Large Magellanic Cloud was the sight of a supernova explosion in 1987, and may be on a path to collide with the Milky Way sometime in the future. Until that time, its relative closeness to Earth makes it a prime target for astronomers to study and understand the mechanics of star formation, as well as the structure of irregular galaxies.

1. Why is the Large Magellanic Cloud named after Ferdinand Magellan?

- He was the first person to tell people in the modern world about its existence.
- He sailed all the way around the world in hopes of observing it for the first time.
- The crew on his ship were the first ones to visit it in space.
- The crew on his ship were the first ones to bring information about it to the modern world.

2. Describe the relationship between the Large Magellanic Cloud and the Milky Way Galaxy.

- The Large Magellanic Cloud is the same shape as the Milky Way.
- The Milky Way caused the Large Magellanic Cloud to become part of the Local Group.
- The Milky Way's gravity may have contributed to the irregular structure of the Large Magellanic Cloud.
- The Large Magellanic Cloud's forces of gravitational attraction affected the size of the Milky Way.

- 3. Which of the following is a *quantitative* fact about the Large Magellanic Cloud?**
- It is located 163,000 light years away.
 - It was the site of a supernova explosion in 1987.
 - It is an irregular galaxy.
 - It was discovered in 1519 by Ferdinand Magellan.
- 4. Which of the following was not a piece of evidence that NASA used to make its prediction that the Large Magellanic Cloud contains a site with frequent star formation?**
- Various colors observed by NASA's telescopes due to collapsing gas clouds
 - High levels of radiation observed by NASA's telescopes
 - A lack of light in the region observed by NASA's telescopes
 - High levels of violence observed by NASA's telescopes
- 5. Say that NASA's spacecraft has brought back knowledge of a satellite dwarf galaxy located millions of light years from Earth. Why would NASA's knowledge about the Large Magellanic Cloud be helpful when trying to study this new dwarf galaxy?**
- The Large Magellanic Cloud is also a satellite dwarf galaxy but is much closer to Earth, giving astronomers a template with which they can approach studying the new galaxy.
 - The Large Magellanic Cloud will have properties that are exactly identical to that of this new galaxy, so studying the Cloud will provide all the necessary information to understand the next galaxy.
 - Studying the Large Magellanic Cloud would not be helpful to understand this new satellite dwarf galaxy.
 - The Large Magellanic Cloud is farther from Earth than this dwarf galaxy, so studying the new dwarf galaxy will help us understand the Large Magellanic Cloud.
- 6. Put the following events in chronological order:**
- Magellan sails around the world with his crew.
 - Knowledge of the Large Magellanic Cloud spreads to the modern world.
 - The Large Magellanic Cloud collides with the Milky Way.
 - A supernova explosion occurs at the Large Magellanic Cloud.
- I, II, III, IV
 - II, IV, III, I
 - I, II, IV, III
 - IV, I, II, III
- 7. Which of the following is the best title for this article?**
- Nearby Phenomena: The Large Magellanic Cloud's Composition and Relevance
 - End of the World: The Dangers Posed by the Large Magellanic Cloud
 - The Local Group: A Look at the Closest Galaxies to the Milky Way
 - An Explorer, a Visionary: A Biography of Ferdinand Magellan