

Name _____

Unlocking the Mystery: How Vast Is the Universe?

Short Answer Key

1. The observable universe is the part of the universe we can see from Earth, and it is approximately 93 billion light-years in diameter.
2. Astronomers use Cepheid variables to measure cosmic distances. This method is significant because it allows astronomers to calculate distances in the universe and create a cosmic distance ladder.
3. A light-year is the distance that light can travel in one year, approximately 5.88 trillion miles (9.46 trillion kilometers). It's useful in astronomy because it helps us describe vast cosmic distances that regular units like meters or miles can't adequately represent.
4. Edwin Hubble made the discovery that the universe is expanding. He observed that galaxies are moving away from us in all directions, indicating that the universe is expanding, similar to a balloon being inflated.

