

Name _____

How Do We Measure The Distance To Galaxies?

Short Answer Key

1. The parallax method involves observing a nearby star from two positions: Earth's position in June and December. The apparent shift in the star's position is called angular parallax and is used to calculate its distance.
2. Standard candles are objects with known intrinsic brightness, crucial for measuring cosmic distances. Examples include Cepheid variables and certain types of supernovae.
3. Hubble's Law states that a galaxy's redshift is directly proportional to its distance from Earth, indicating an expanding universe. Greater redshift corresponds to greater distance.
4. Cepheid variables are pulsating stars with a period-brightness relationship. Astronomers use their pulsation periods to determine their true luminosity and, consequently, their distance.
5. The cosmic distance ladder is essential because it provides a sequence of methods, from nearby stars to distant galaxies, to measure cosmic distances accurately. Each rung builds upon the previous one, ensuring cross-verification and reliability.

