

Name _____

Stargazing Wonders: Measuring the Universe with Light

Open-Ended Response Answer Key

1. Answers may vary but should include engaging explanations using relatable examples, such as comparing parallax to shifting perspectives while walking.
2. Light is a fundamental tool in astronomy because it carries information from distant objects to us. It allows us to study celestial bodies, their composition, and their motion. However, its limitations include the finite speed of light and the fact that it can be blocked or absorbed by intervening matter.
3. The discovery of the universe's expansion has reshaped our view of the cosmos and our place within it. It has led to the understanding that the universe had a beginning (the Big Bang) and continues to evolve. This realization has profound philosophical and existential implications for humanity.
4. Future advancements in space telescopes and technology may include larger and more powerful instruments capable of observing even fainter and more distant objects. Enhanced imaging techniques, spectroscopy, and data analysis methods could lead to groundbreaking discoveries, such as the detection of exoplanets or the study of dark matter and dark energy.

