

Name _____

Galaxies' Influence On The Motion of Stars and Planets

Short Answer Key

1. Galactic tides distort stars' orbits by stretching them into elongated paths, affecting their shapes and orientations.
2. Dark matter contributes to the gravitational dance within galaxies by providing additional mass that influences the motion of stars and planets, even though it remains undetectable through traditional means.
3. Interactions between galaxies can disrupt the stable orbits of stars and planets by inducing gravitational interactions, causing changes in their trajectories and potentially leading to mergers or ejections.
4. Astronomers use tools such as telescopes, computer simulations, and observations in different wavelengths (e.g., radio, infrared, visible) to study the motions of stars and planets within galaxies.
5. Understanding how galaxies influence celestial object motions is crucial for astronomers because it helps reveal the underlying dynamics of galactic systems and provides insights into the formation and evolution of galaxies and their inhabitants.

