Name _____

Stellar Collisions: Can Stars Crash into Each Other?

Short Answer Key

1. Binary stars are pairs of stars that orbit a common center of mass. Over time, if the stars in a binary system draw closer due to their gravitational attraction, they can eventually collide or merge, leading to a stellar collision.
2. A massive star colliding with another massive star can trigger a supernova, a powerful explosion. This explosion releases enormous energy and can lead to the formation of heavy elements, like gold and silver.
3. Most stars are located in less densely populated regions of space, where the distances between stars are vast. Stellar collisions are more likely to occur in densely packed regions, such as globular clusters. Therefore, the majority of stars will not come into close proximity with other stars that could lead to collisions.
4. Globular clusters are densely packed regions of space that contain thousands to millions of stars. Due to their close proximity within these clusters, interactions between stars, including collisions, are more likely to occur within globular clusters than in less dense regions of space.
5. Heavy elements like gold and silver are produced during a supernova explosion resulting from a stellar collision.