

# why study binaries?

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- ▶ Binary stars are common - approximately half of all stars are members of a binary.
  - ▶ Binary stars provide the *only* means of determining accurate stellar masses. Without such information, we would not be able to test theories of stellar formation, structure, and evolution.
  - ▶ Evolution within a binary star results in some of the most exotic inhabitants of our Galaxy, such as the Type I supernovae, novae, X-ray binaries, black hole binaries, binary pulsars, and even some of the gamma-ray bursters.
  - ▶ Binary stars provide a unique laboratory for the study of matter under extreme physical conditions, pushing modern theories of physics, such as Quantum Mechanics and Einstein's General Theory of Relativity, to the limits of their predictive powers.
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