

Hierarchical triple stars consist of two stars orbiting each other on a close orbit and a third, more distant star. This is the only observed dynamically stable configuration of triple systems. The third star needs to be far enough from the close binary, otherwise the stars start moving chaotically which eventually results in ejecting one of the components out of the system. This condition is described by several criteria of dynamical stability.

HD 152246 is a hierarchical triple star with an eccentricity seemingly too high to be dynamically stable. Using a recently observed set of spectra, I determined more precise and accurate orbital elements of this system. I showed that the eccentricity value is lower and the system does fulfill stability criteria. I also showed that the system is dynamically evolving - the short orbit inclination is changing in time.

δ Cir is a triple system that consist of an eclipsing binary and a more distant third star. Moreover, there are some signs that the third star is also a binary. Using spectra of the system, I calculated a more precise mutual period of the eclipsing binary and the third star as well as its other orbital elements. I also combined spectroscopic and photometric data to determine more precise parameters of the eclipsing binary.