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Walkaway Stars: Evidence for Stellar Mergers

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Newborn non-hierarchical systems of multiple stars are unstable and the motion of the stars is chaotic. Occasional close encounters of three members allow the exchange of energy and momentum, and as a result the system will transform into a hierarchical architecture, typically with the two more massive stars forming a binary and a
lower-mass star ejected into a bound orbit or becoming a runaway or walkaway star. The process induces a high eccentricity to the newly bound binary. This may lead to dissipative disk-disk interactions at periastron, thus tightening the semimajor axis or - in the extreme - the components will merge. Runaway/walkaway stars and mergers are known among massive stars. I here discuss the first such case among low-mass T Tauri stars.

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