

Very high spatial resolution study of multiplicity in T Tauri systems.

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Abstract

We present first relevant results from our survey to search multiplicity in T Tauri systems and its relation with disk presence and planet formation on these young stars. This very high spatial resolution survey is being developed with Lucky Imaging techniques using the instruments FastCam and AOLI [3] at the Observatorios de Canarias. Although still in an initial phase, we have already studied some systems, such as the one formed by the triplet LkH α 263, an edge-on disk and a close binary pair (0.4 arcsec), and LkH α 262, an M0 star with an unresolved companion. They have been long discussed to be bounded [1].

Our new data, combined with previously available Adaptive Optics near infrared images [2] have led us to the following: a) there is orbital motion of the pair LkH α 263 AB and the component C is comoving with it. b) the likely existence of a close companion to LkH α 262. c) LkH α 262 and 263 are gravitationally bounded, thus, this system is one of the few quintuple pre-main sequence systems known till now. Besides the resolved edge-on thick disk around LkH α 263 C, the SEDs developed by us show the presence of disks around either 263 A, 263 B or both of them and also around 262. A deeper study of this particular system can be seen in [4].

References

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