

# Revealing the Architecture of GG Tau A through Orbital Modeling and Disk Dynamics

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GG Tau A is a young hierarchical triple surrounded by a massive circumtriple disk whose sharply defined inner edge, at about 190 au, remains difficult to reconcile with previously proposed orbital configurations. Earlier studies fitted the inner and outer orbits independently, preventing a fully self-consistent reconstruction of the system architecture. We present a simultaneous fit of the astrometric data for the three stellar components, which yields coherent families of orbital solutions for the hierarchical triple. We then begin the dynamical exploration of these solutions with pure N-body simulations, in order to identify the architectures that are compatible with the observed location of the disk inner edge and to select the most promising candidates for future hydrodynamical modeling. This combined framework allows us to discriminate between astrometrically acceptable solutions using the disk inner edge as an additional constraint. GG Tau A thus provides a benchmark for linking simultaneous orbital modeling and disk dynamics to recover the architecture of young multiple systems.