

From star clusters to field populations: survived, destroyed and migrated clusters



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The dynamical history of M67

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M67 is a cornerstone open cluster for stellar astrophysicists. It is the same age and metallicity as the Sun - indeed its stars are so similar to the Sun that some have speculated that the Sun may have been born there. Furthermore its location - relatively close to us but well above the plane of the Milky Way - makes it easy to distinguish from the background field population. However this poses a question - how did M67 reach its present-day Galactic orbit? I will describe our investigations into different dynamical processes that affect cluster orbits in the Milky Way, how they could have acted to take M67 onto its present orbit, and the present-day orbits of the stars lost along the way. Our conclusion is that dynamics alone does not prevent a solar origin in M67, but makes it rather unlikely. Finally, I will briefly mention an interesting side-effect of M67's age and metallicity - the low mass of its surface convection zone - which makes it uniquely valuable as a place to study the ingestion of planets into stellar photospheres.

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