

Contributed Talk

Splinter Populations

BINARY STARS IN GALACTIC GLOBULAR CLUSTERS

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From globular clusters we can learn how stars evolve over time, how the dynamical star system functions, and what influence they have on their hosting galaxy. We are currently realising a massive spectroscopic survey in 25 Galactic globular clusters with MUSE at the VLT. MUSE gives us the possibility to extract spectra of some thousand stars per exposure. One of our aims is to create a stellar census of binaries in globular clusters. Binary stars have a strong influence on the core collapse and stellar evolution in globular clusters and are therefore important for their overall evolution. With different epochs on a specific globular cluster, we use the radial velocity method to find variable stars. There are several aspects of binaries that are worth to examine. One is the statistical approach on how the binary fraction differs in various spatial or stellar parameter regions. For example a study of Blue Stragglers in binary systems could help to get a better understanding on the link between the stellar and dynamical evolution of globular clusters. Another aspect is the study of single binary systems to learn more about period and mass distributions of host and companion stars in specific globular clusters. Recently we found a detached stellar-mass black hole candidate in a globular cluster which is an important constraint for binary and black hole evolution models in globular clusters as well as in the context of gravitational wave sources.