

HRMOS and metallicity variations in globular clusters

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The presence of more than one stellar population in globular clusters (GCs) is one of the most intriguing topics in the field of stellar populations. Recently, we have understood that the properties of the different populations are best constrained by precise chemical abundances coupled with the nicknamed “Chromosome Maps” photometric diagram. Reading the “Chromosome Maps” by using the chemical abundances it resulted that, contrary to what commonly believed, a significant fraction of GCs may host stellar populations with different metallicity and heavy element chemical abundances. If all these objects will be confirmed to host stellar populations with different heavy elements abundances, then we have a quite high frequency of Omega Centauri-like GCs. These objects have experienced a more complex star-formation history, and might be associated with former dwarf galaxies.

One of the most shocking discoveries is perhaps the apparent metallicity inhomogeneity of even the first stellar population, i.e., that one with elemental ratios similar to that of halo field stars. I will present the latest results on how to read the GC Chromosome Maps in terms of chemical abundances. I will focus on the most intriguing features observed on the maps, namely the features that can be interpreted as proxies of metallicity variations and how future HRMOS observations will provide important steps forwards in this context.

Type

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