A SYNOPTIC VIEW OF THE MAGELLANIC CLOUDS:
VMC, GAIA AND BEYOND

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Is there a stellar mass threshold for the multiple stellar populations in young globular clusters?

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Recent photometric studies of RGB stars have found that the presence of multiple stellar populations in massive (∼1e5 Msun) globular clusters in all clusters older than ∼2Gyr. However, no detections of multiple populations have been found in the RGB of clusters below ∼2Gyr. Such a relation with age is not expected in any scenario for the origin of MPs, and constitutes one of the most important findings in the field in recent years. One potential explanation for the observations is that MPs do exist within the young clusters, but only on stars below a certain mass limit. Here we present the results of deep imaging of NGC 419, a massive (∼1e5 Msun) 1.5 Gyr SMC cluster, in order to search for splitting along main sequence stars (∼1 Msun and below) caused by the chemical anomalies. This work represents the first like-with-like comparison between the unevolved low mass stars found in old globulars known to host multiple stellar populations, and the same unevolved low mass stars found in young massive clusters.