

Omega Centauri: main sequence's multiple populations galore

Monday, 18 September 2017 12:15 (15 minutes)

We take advantage of the exquisite quality of the Hubble Space Telescope to distill the main sequence of omega Cen into its constituent populations. To this end, we restrict ourselves to the five most useful filters: the magic “trio” of F275W, F336W, and F438W, along with F606W and F814W. We develop a strategy for identifying color systems where different populations stand out most distinctly, then we isolate those populations and examine them in other filters where their subpopulations also come to light. In this way, we have identified at least 15 subpopulations, each of which has a distinctive fiducial curve through our 5D photometric space. Our findings show that the stellar populations and star formation history of omega Cen are even more complex than inferred previously.

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Session Classification: Ages of the oldest stars and the connection to the halo and accretion