

The Yonsei Project on Omega Centauri

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Our recent CCD photometry has shown, for the first time, that ω Centauri has several distinct stellar populations, which is reminiscent of the Sagittarius dwarf galaxy. Here we present more detailed analysis of the data along with the population models. We confirm the presence of several distinct red giant branches (RGBs) with a red metal-rich sequence well separated from other bluer metal-poor ones. Our population models suggest the red clump associated with the most metal-rich RGB is about 4 Gyr younger than the dominant metal-poor component, indicating that ω Centauri was enriched over this timescale. These features, taken together with this cluster's other unusual characteristics, provide good evidence that ω Centauri was once part of a more massive system that merged with the Milky Way, as the Sagittarius dwarf galaxy is in the process of doing now. Mergers probably were much more frequent in the early history of the Galaxy and ω Centauri appears to be a relict of this era.

Accretion of Globular Clusters from Satellite Galaxies

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There is now a growing body of evidence that the Galactic globular cluster (GC) system has been developed at least partially by the tidal accretion of GCs from satellite galaxies. Here we find a particular group of outer-halo GCs has the positional and orbital characteristics fully consistent with the hypothesis that they were tidally captured from a single satellite galaxy. We tentatively suggest that their former parent galaxy was the Large Magellanic Cloud. If our interpretation is correct, this group and the Sagittarius GC system, would provide direct evidence for past and continuing accretion of GCs from companion galaxies.