

The First Confirmed Microlensing Event in a Globular Cluster

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Abstract: Using adaptive optics at ESO VLT/NACO, for the first time from the ground, we have resolved components of a microlensing system. The microlensing event occurred in 2000 July/August at a distance of 2.33 arcmin from the center of the globular cluster M22 (NGC6656), observed against the dense stellar field of the Milky Way bulge. The position of the objects measured in July 2011 is in agreement with the observed relative proper motion of M22 with respect to the background bulge stars. Based on the brightness of the microlens components we find that the source is a solar-type star located at a distance of 6.0 ± 1.5 kpc in the bulge, while the lens is a 0.18 ± 0.01 Msun dwarf member of the globular cluster located at the known distance of 3.2 ± 0.2 kpc from the Sun.