

Hunting for Brown Dwarfs in the Globular Cluster M4: Second epoch of deep near-IR observations

Monday, September 18, 2017 5:27 PM (2 minutes)

Brown Dwarfs (BDs) present a link between stars and planets, and thus are important for our understanding of both star and planet formation and evolution. Large numbers of BDs have now been detected, but we still do not know much about OLD, METAL-POOR BDs. Globular clusters are the oldest, most metal-poor and most massive stellar aggregated in our Galaxy, and might have produced BDs in large numbers. Our first epoch NIR colour magnitude diagram (CMD) of the old (11.6 Gyr) globular cluster M4 revealed four faint sources that are located in the BD region of the CMD, but had no optical counterpart (i.e. they are not WDs), suggesting that we found four good BD candidates. The second epoch NIR HST data are currently been taken and analysis has already started. We will present the current status of this project and, most importantly, we will determine whether our BD candidates are indeed cluster members, and as such the first confirmed BDs in a globular cluster, or not.

Primary author: DIEBALL, Andrea (University of Bonn)

Co-authors: DOTTER, Aaron (Harvard University, USA/MA); KNIGGE, Christian (University of Southampton, UK); ZUREK, Dave (American Museum of Natural History, USA/NY); ALLARD, France (Centre de Recherche Astrophysique de Lyon, France); RICHER, Harvey (University of British Columbia, Canada); BEDIN, Luigi (INAF - Osservatorio Astronomico di Padova, Italy); RICH, Michael (UCLA, USA)

Presenter: DIEBALL, Andrea (University of Bonn)

Session Classification: quick poster presentations