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BOCCE PROJECT: THE BOLOGNA OPEN CLUSTER CHEMICAL EVOLUTION

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The BOCCE project is a photometric and spectroscopic survey of Galactic open clusters (OCs), to be used as tracers of the Galactic disk properties and evolution. The main OCs parameters are derived in a precise and homogeneous way, and they will be used, for example, to determine the metallicity distribution in the Galactic disk and how it has evolved with time. We have presently data for 40 OCs. We present here part of our last effort, concerning the photometric data obtained for NGC 2849.

OCs play a prominent role in the delineation of the chemical and dynamical evolution of the Galactic disk (e.g., Friel 1995). This is due to the fact that their fundamental parameters may be determined more easily and accurately than those for isolated stars. OCs have been used to determine the metallicity distribution, but there are some discrepancies. For example, Friel et al. (2002) found a negative radial gradient, while Twarog et al. (1997) invoked two flat distributions at $\sim$ solar and sub-solar metallicity with the discontinuity $R_{\rm GC} \sim 10$ kpc. Recent OCs observations at large $R_{\rm GC}$, indicate a negative gradient in the inner region and a flattening in the outer disk, (e.g., Sestito et al. 2008; Friel et al. 2010).

The main interest of our survey is the chemical evolution of the disk, so we named it the *Bologna Open Cluster Chemical Evolution* project (BOCCE). Our goal is to build a sample large enough to be representative of the whole OC population. We employ: photometry and synthetic CMDs technique to derive at the same time age, distance, reddening and a first indication of metallicity (see Bragaglia & Tosi (2006)); medium and high resolution spectroscopy to derive radial velocities and chemical abundances, respectively (see Bragaglia et al. (2001)).

One of the recent analyzed OC is NGC 2849. According to Lyngå catalogue (1987) is a faint OC with an apparent diameter $\sim 3'$. It was observed at the 0.91 m Dutch telescope located in La Silla (ESO, Chile), on 1997. Observations were done with B, V, and I filters. By means of the comparison between the cluster sequence and the isochrones from Bertelli et al. (1994) for $Z = 0.008$, we derive for NGC 2849: a colour excess $E(B-V) = 0.495 \pm 0.005$, a distance modulus $(m - M)_0 = 15.1 \pm 0.1$, and $\log(t) = 8.75 \pm 0.05$, as we show in Figure 1. These parameters are in good agreement with the ones derived previously by Ahumada (2003) and Kyeong et al. (2004).

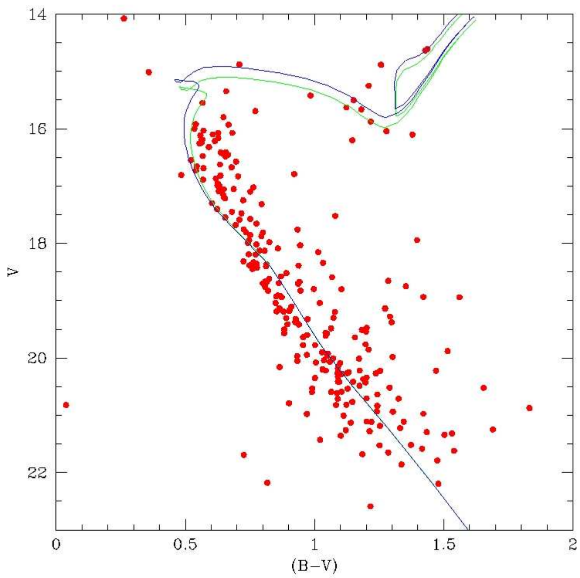

Fig. 1. CMD for stars in NGC 2849, and the isochrones from Bertelli et al. (1994) for $Z = 0.008$, of $\log(t) = 8.80$ (blue) and $\log(t) = 8.70$ (green).

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REFERENCES

Ahumada, J. A. 2003, RevMexAA, 39, 41
Bertelli, G., et al. 1994, A&ASS, 106, 275
Bragaglia, A., & Tosi, M. 2006, AJ, 131, 1544
Bragaglia, A., et al. 2001, AJ, 121, 327
Friel, E. D. 1995, ARAA, 33, 381
Friel, E. D., et al. 2010, AJ, 139, 1942
Friel, E. D., et al. 2002, AJ, 124, 2693
Kyeong, J.-M., et al. 2004, AJ, 128, 2331
Lynga, G. 1987, Lund Cat. Open Cluster Data (5th ed.; Lund: Lund Observatory)
Sestito, P., et al. 2008, A&A, 488, 943
Twarog, B., et al. 1997, AJ, 114, 2556

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