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Seminar III introduction

2 messages

Chien-Cheng Lin <cclin@astro.ncu.edu.tw> Wed, Jan 9, 2013 at 12:01 AM
To: Wen-Ping Chen <wchen@astro.ncu.edu.tw>

Dear Sir

Here is my introduction of my recent draft. Hope it can be an example for our seminar class.

Some 10^5 open clusters (OCs) are estimated to exist currently in our Milky Way Galaxy based on counts of OCs in the solar neighborhood (Piskunov et al. 2006). However, the most recent databases of OCs (Dutra & Bica 2001; Dias et al. 2002; Bica et al. 2003; Dutra et al. 2003; Kronberger et al. 2006; Froebrich et al. 2007) contain only a few thousand entries and are largely incomplete, limited to OCs within 1 kpc. The discrepancy may be due partly to dust extinction in the Galactic plane, and partly to lack of comprehensive all-sky searches.

Star clusters can be characterized by grouping of member stars in a 6-dimensional phase space in position and velocity. Kinematic studies require special instrumentation and are often time-consuming. The other method is the space grouping or “star-count” technique which is relatively straightforward and has been exploited efficiently on wide-field or all-sky surveys (Schmeja 2011). The Two Micron All Sky Survey Point Source Catalog (2MASS; Skrutskie et al. 2006) provides a uniformly calibrated database of essentially the entire sky in the infrared wavebands. Furthermore, infrared observations allow us to recognize OCs even with moderate dust extinction, i.e., partially embedded, young star clusters. Recent work done by Bica et al. (2003); Dutra et al. (2003); Froebrich et al. (2007) and Fu & Chen (2008) have indeed found hundreds of previously unknown infrared clusters with the 2MASS.

We have developed a star-count technique to recognize star density enhancements in the 2MASS. A total of hundred candidates were rediscovered, most of them can be matched with known object from the SIMBAD database. One such density peak is G144.9+0.4, (α2000, δ2000 =03:39:16.7, +55:58:24), located in the Cam OB1 association. Here we present a characterization of this candidate using photometric and proper motions data.

Cheers,
Roger

Chen Wen-Ping <wchen@gm.astro.ncu.edu.tw> Wed, Jan 9, 2013 at 8:49 AM
To: Chien-Cheng Lin <cclin@astro.ncu.edu.tw>
Cc: Wen-Ping Chen <wchen@astro.ncu.edu.tw>

This is well written. WP
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