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Memorie della

The Guide Star Catalog II

Properties of the GSC 2.3 release

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Abstract. The Guide Star Catalog II (GSC-II) is a joint project of the STScI (Baltimore) and INAF-OATo (Italy) for the construction of an all-sky astronomical catalogue containing position, multicolour photometry, classification and proper motions for 1 billion of stars and galaxies down to R$\sim$20 mag. Astrometric and photometric data have been derived from the analysis and calibrations of about 8000 digitized Schmidt plates of the Palomar and AAO surveys. This material makes up a formidable data set for the hunt of rare targets as late type stars, white dwarfs, etc. (see eg. Carollo et al. 2006, A&A, 448, 579), as well as for the study of the main galactic stellar populations of the thin/thick disk and the halo (see eg. Vallenari et al. 2006, A&A 451,125). The last public release, GSC 2.3, contains positions, photographic photometry B_J, R_F, I_N, and classification for approximately 997,028,547 entries extracted from the complete GSC-II database. GSC 2.3 is currently used for HST Bright Object Protection and it replaces GSC-I for HST pointing since cycle 15. Public access to this catalog is available through a web form at STScI and OATo, or via the services provided by the National VO. Here we describe the properties of GSC 2.3 and discuss its astrometric and photometric accuracy with respect to other large surveys (DENIS, SDSS, UCAC2, USNO-B).

Key words. catalogs – surveys – astrometry – photometry – Galaxy: stellar content

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