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What Gaia will see

All-sky counts in Gaia's unfiltered passband

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Abstract. Using the Guide Star Catalogue 2.3 (GSC2.3), and appropriate color transformations based on synthetic photometry, we estimate the number of stars, as a function of Gaia's unfiltered G magnitude, for approximately one square degree areas covering the entire sky. In addition, corrections to these GSC2.3 based counts are made for misclassification and image blending, both important effects at faint magnitudes for crowded fields at low galactic latitudes. The resulting map has been used for mission preparation studies including telemetry budget studies by ESA, and as a "reality check" of the counts produced by the Besancon Galaxy Model, a version of which is being used by the Gaia Data Processing and Analysis Consortium to simulate the Gaia data stream. Summary all-sky statistics of the stellar field density are presented.

Key words. Galaxy: structure

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