

# GAMA9 Spectroscopic Redshift - Selection Functions and Completeness - Version 1.0

## Selection Functions

Spectroscopic redshifts in GAMA 9 are dominated by the GAMA survey and the SDSS. Both of these surveys cover the entire GAMA9 field with even coverage. The GAMA survey is targetting all sources in the fields with an r-band magnitude  $< 19.8$ . The SDSS selection is more complicated than the GAMA survey as different SDSS surveys/spectrometers have different selection criteria, see [https://www.sdss3.org/dr10/algorithms/legacy\\_target\\_selection.php](https://www.sdss3.org/dr10/algorithms/legacy_target_selection.php) and [https://www.sdss3.org/dr10/algorithms/boss\\_target\\_selection.php](https://www.sdss3.org/dr10/algorithms/boss_target_selection.php). Details are not given here as the GAMA r-band limit is far stricter than the SDSS equivalent (for local galaxies).

## Completeness

As the redshifts for all surveys except SDSS DR10 have been incorporated into the GAMA-II release we report the spectroscopic completeness from the GAMA-II data release paper (Liske et al. 2015, submitted). The completeness of the GAMA 9 is not limited by the number of galaxies that could have a fibre assigned but the number of galaxies that gave a reliable redshift. The overall completeness is 98.4%, however as we are limited by successful observations we can split this completeness into bins of r-band magnitude and surface brightness. Figure 1 and 2 shows the redshift completeness as a function of these two quantities. More detailed information is given in Liske et al. (submitted).

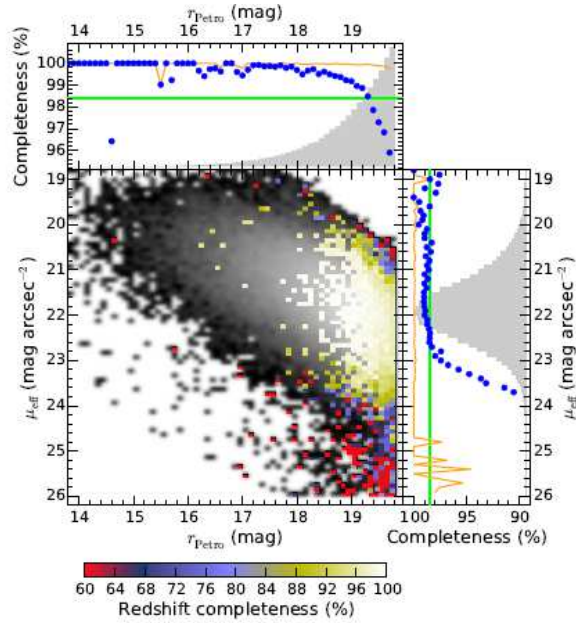


Figure 1 This figure has been taken from Figure 23 in the GAMA-II release paper (Liske et al, submitted). The caption taken directly from the paper is: The colour image in the main panel shows the redshift completeness of the equatorial survey regions as a bivariate function of SDSS DR7 r-band Petrosian magnitude and effective surface brightness, both corrected for Galactic extinction. The grey-scale image in the background shows the distribution of main survey targets in this plane using a logarithmic scale. The blue points and orange lines in the side panels show the redshift and targeting completeness as a function of just one of these parameters, respectively. The green lines in these panels show the overall redshift completeness in the equatorial survey regions. The grey shaded histograms show the target distributions (now using a linear scale).

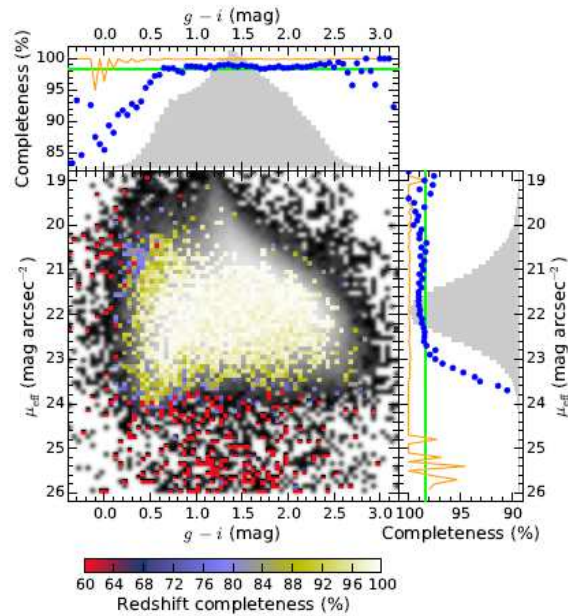


Figure 2 This figure has been taken from Figure 24 in the GAMA-II release paper (Liske et al, submitted). The caption taken directly from the paper is: As Fig. 23 for observed SDSS DR7 g-i colour (using model magnitudes) and r-band effective surface brightness.