

WTS Candidate Transit Star Measurements

Niall Goulding

University of Hertfordshire

n.t.goulding@herts.ac.uk



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Background

- Complete bachelors degree in June 2009
- Started PhD at Herts October 2009.
- Graduating on Thursday!

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Characterisation of the WTS candidates stars by:

- Proper motions
- Colour-colour plots

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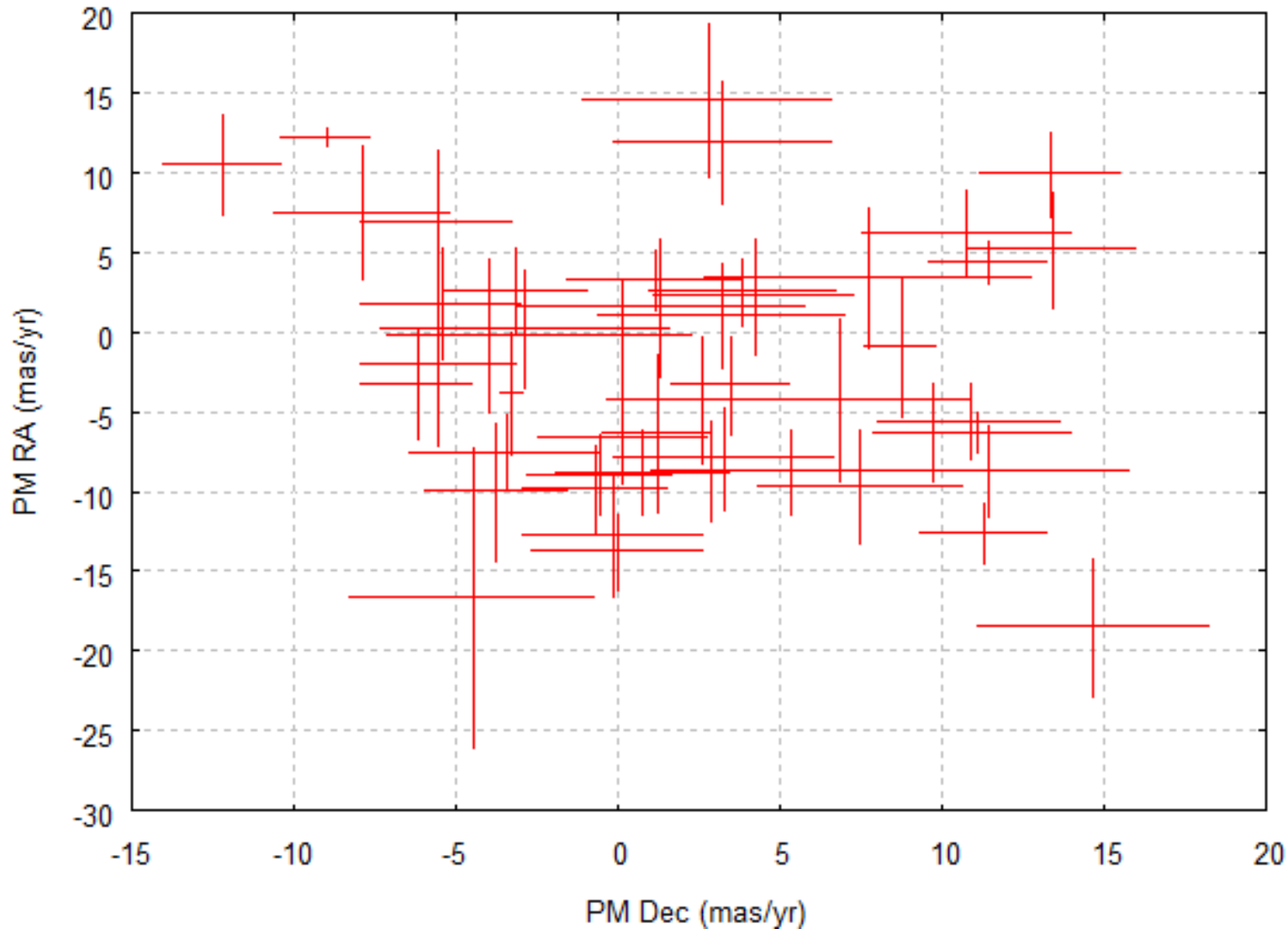
Proper motions

Found in GAIA from POSSI and POSSII surveys using reference stars compared over two epochs.

Using IRAF programs GEOMAP and GEOXYTRAN to find shift in candidate star and uncertainties in shift.

Centroiding program and GAIA to find uncertainties for dim stars.

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Low proper motions and high uncertainties.

Not useful for all stars where uncertainty \sim motion.

Other methods must be sought.

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Colour-colour diagrams

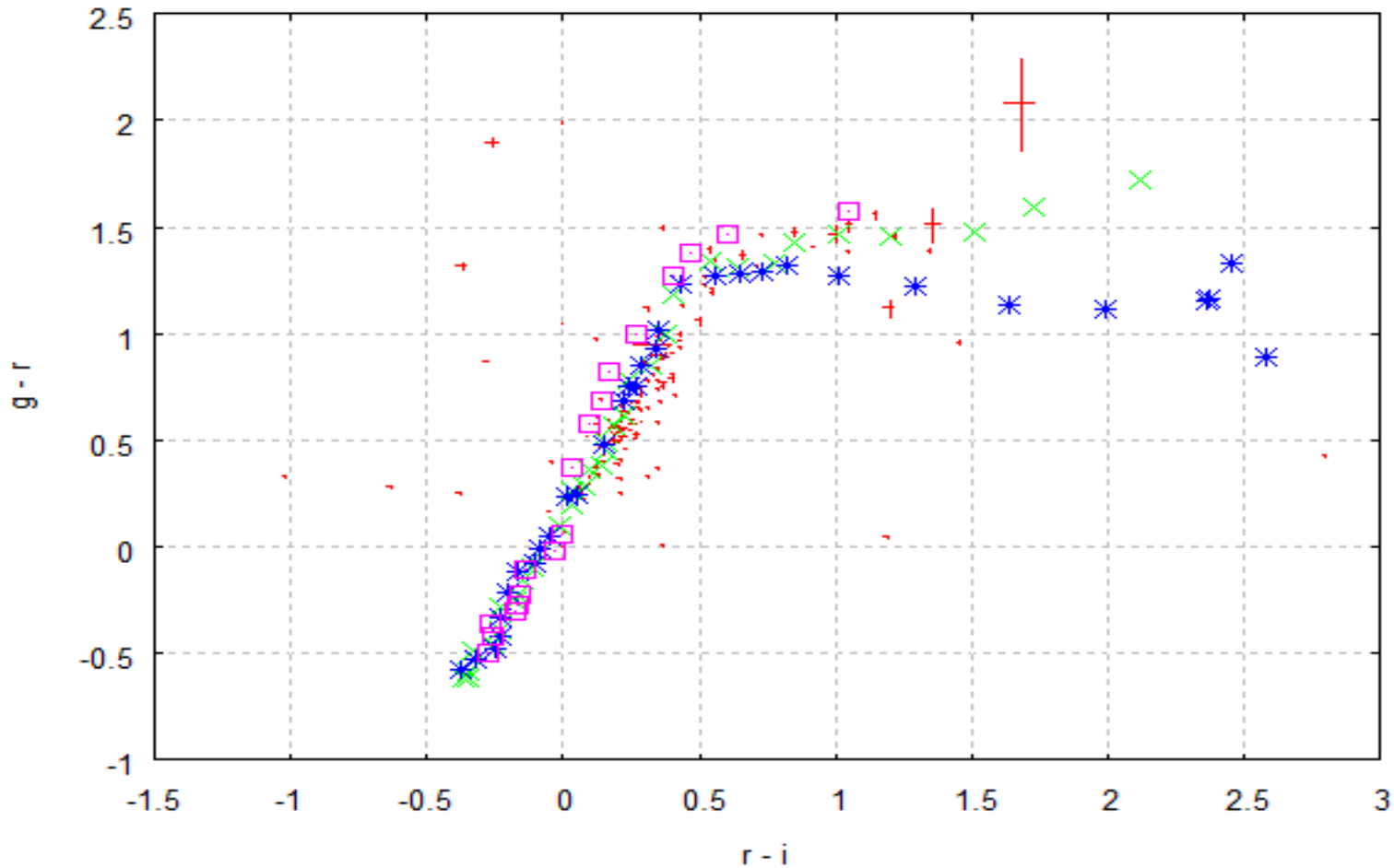
WTS data plotted in:

- g-r v. u-g
- r-i v. g-r
- i-z v. r-i
- z-J v. i-z
- J-H v. z-J
- H-Ks v. J-H

Compared with synthetic standards calculated by Pickles (1998) and plotted by Covey et al. (2007).

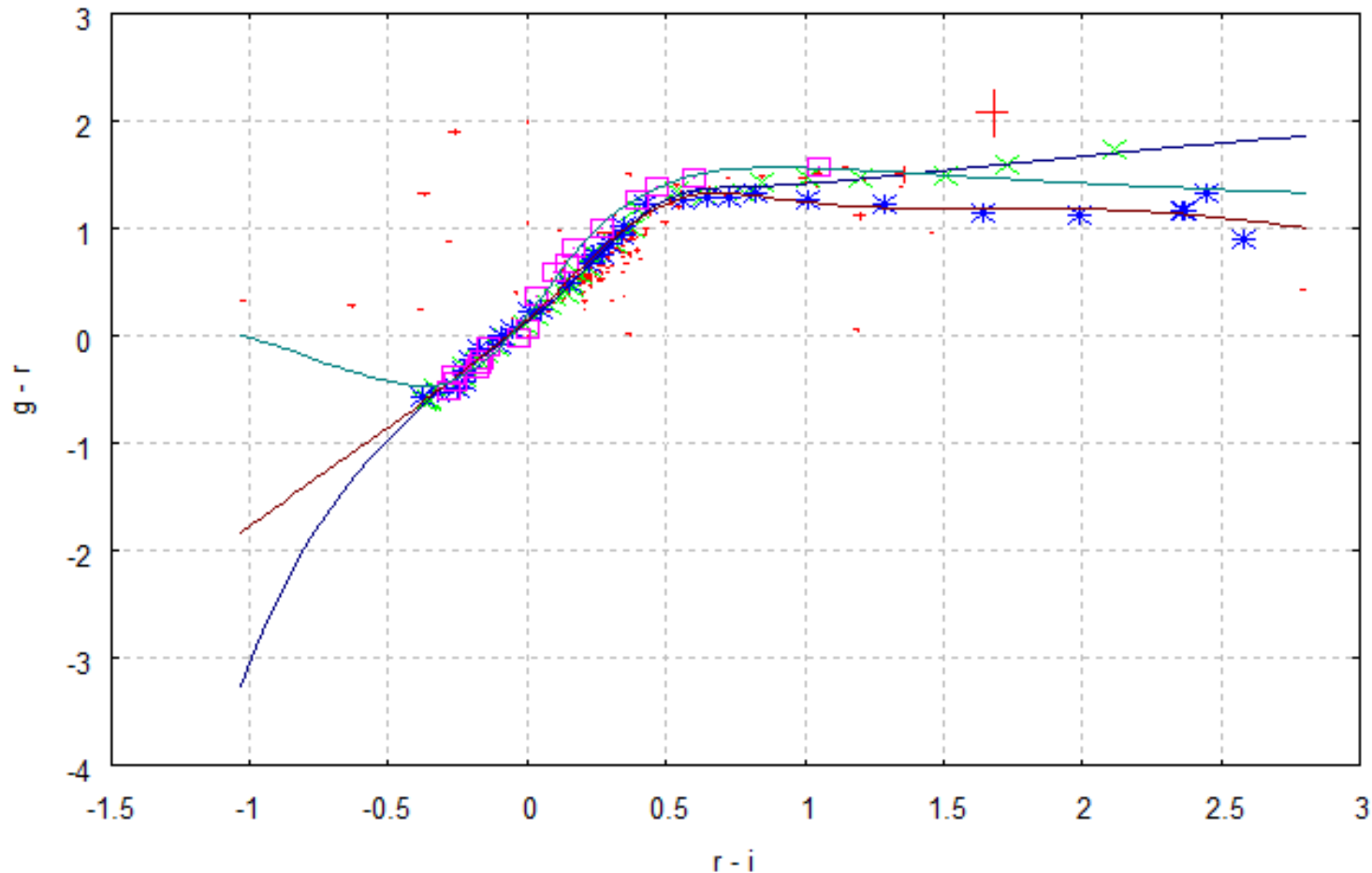
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Example plot $r-i$ v $g-r$:



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Example plot $r-i$ v $g-r$ with fit:



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Future tasks:

Obtain proper motions for all WTS candidate stars using additional images.

Better fits to limited regions of the plots in order to ascertain the nature of the candidate stars.

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Summary

Most stars can be categorised by their proper motions and/or their colour fluxes.

The nature of some stars cannot be deduced from as they have low proper motions and do not seem to fit with any trends on colour-colour diagrams.

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References

Covey, K. R. et al. Stellar Sed From 0.3-2.5m: Tracing The Stellar Locus and Searching for Color Outliers in SDSS and 2MASS

Pickles, A. J. A Stellar Spectral Flux Library, 1150-25000 Å. 1998. PASP, 110, 863