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## Structure and substructure in the stellar halo of the Milky Way

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## Structure and substructure in the stellar halo of the Milky Way

1. Wide area is more important than photometric depth when trying to constrain the density profile of the inner halo. Conversely, photometric depth is more important than wide area when trying to constrain the density profile of the outer halo.  
(*Chapters 1 and 2*)
2. The major stellar halo substructures cannot hide in the data-to-model residuals of radial stellar density profiles, whether they have been included in the fitted data or not, and provided enough lines of sight exist. However, allowing the structural models to fit these data is not good modeling practice.  
(*Chapters 1 and 2*)
3. The quality of the photometry is critical to detect nearby sparse stellar overdensities in previously explored regions of the halo.  
(*Chapter 3*)
4. The cross-correlation of a colour magnitude diagram to a stellar main sequence template is an accurate method to derive the distance to a spatially concentrated stellar population provided that the right theoretical isochrone is chosen to characterize it.  
(*Chapter 3*)
5. Poor spatial coverage renders nearest neighbours density maps uninformative at short scales.  
(*Chapter 5*)
6. The Gaia data signal a new era in observational Galactic Archaeology.
7. Spectroscopic observations of the Sagittarius stream's faint and bright branches are needed if we are to build a final model for the Sagittarius stream history and in order to have a reliable model for the Galactic potential.
8. The astronomical community would benefit in the long term from shifting its weight from university departments to research institutes.
9. The moral duty of a scientist, a humanist or any rational thinker is to actively and continually educate him or herself against unconscious biases.
10. Large open source projects prove that anarchy —of certain forms and on certain environments— can be successful.
11. Critical thinking should be a priority of all educational programmes in all free, truly-democratic countries.
12. Individual procrastination can be reduced through subtle changes in the environment, as inferred from the Revised Marshmallow Experiment.

Leiden, 16th of June, 2015  
Berenice Pila Díez