

# Oliver Newton

## Curriculum Vitæ

Institute for Computational Cosmology  
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## Education

2015– **PhD**, *Institute for Computational Cosmology*, Durham, UK.

Supervisors: Prof. Adrian Jenkins and Prof. Carlos Frenk

- Produced code implementing a Bayesian inference method to estimate the total satellite population of the Milky Way from incomplete data.
- Used these and predictions of substructure from the Extended Press-Schechter formalism to constrain alternative dark matter models.
- Analysed simulations ranging in scale from Local Group to cosmological volumes. These include Aquarius, APOSTLE, and COCO.
- Experience running and analysing GALFORM output.

2010–2014 **BSc MPhys**, *University of Warwick*, Coventry, UK, *1st Class (Honours)*.

Masters project: Determining the fundamental properties of Higgs candidates at the LHC

## Employment & voluntary work

### Vocational

2014–2015 **Graduate Trading Platform Engineer**, *Fidessa*, Woking.

Implemented, configured, tested and deployed trading platform software for customers. Investigated and resolved technical issues as they arose.

Detailed achievements:

- Coordinated a team of 20 people in the successful roll-out of a high impact, technically complex project;
- Developed, maintained and integrated customer-specific software customisations;
- Gained experience using TCL and SQL.

### Charity Board of Trustees

2014– **Founding trustee & Treasurer**, *UniBrass Foundation* (reg. no. 1,159,359).

Manage an annual budget of  $\sim$ £30k in support of the annual University Brass Band Championships of Great Britain and Northern Ireland. Ensure charity is compliant with all legal obligations.

## Conference contributions

### Contributed talks

Dec 2018 **VIRGO Consortium meeting**, Leiden University, Netherlands.

Constraints on the mass of the thermal relic warm dark matter particle

Aug 2018 **XXX IAU General Assembly**, Vienna, Austria.

Constraining the mass of the WDM particle using estimates of the total satellite population of the Milky Way

Jan 2018 **DEX XIV**, Durham, UK.

The total satellite population of the Milky Way

Dec 2017 **VIRGO Consortium meeting**, MPA Garching, Munich, Germany.

The total satellite population of the Milky Way

July 2017 **National Astronomy Meeting**, Hull, UK.

The total satellite population of the Milky Way

Dec 2016 **VIRGO Consortium meeting**, Durham, UK.

MW satellite galaxies: how many could there be?

### Posters

Aug 2018 **XXX IAU General Assembly**, Vienna, Austria.

Constraining the mass of the WDM particle using estimates of the total satellite population of the Milky Way

## Teaching/supervising experience

2018– Co-supervising a 4th year student's master's thesis

2017–2018 Co-supervisor of a 4th year student's master's thesis titled 'Studying the dark matter distribution of the Local Group using dwarf galaxies.'

## Committees

2018– **Small Galaxies, Cosmic Questions LOC**, *Member*, Durham, UK.

Member of the Local Organising Committee for the "Small Galaxies, Cosmic Questions" conference to be held in August 2019

2016–2017 **Postgraduate Journal Club**, *Co-convenor*, Durham, UK.

Coordinated a weekly meeting of postgraduate students to discuss recent papers and share knowledge.

## Professional memberships

May 2017– Fellow of the Royal Astronomical Society

## Outreach

### Events

Oct 2018 **Celebrate Science**, Durham, UK.

Galaxy Makers

Apr 2018 **Schools Science Festival**, Durham, UK.

Galaxy Makers

Oct 2017 **Celebrate Science**, Durham, UK.

Galaxy Makers

Apr 2017 **Schools Science Festival**, Durham, UK.

Galaxy Makers

Jul 2016 **Royal Society Summer Science Exhibition**, London, UK.

Galaxy Makers

### Activity development

2015–2016 **Galaxy Makers**, Durham, UK.

Developed design ideas and ran the constituent *EAGLE* volumes that were visualised in the final exhibit.

## Computer skills

Python,  $\text{\LaTeX}$ , TCL, SQL, Microsoft Office suite

## Publications

2018 Oliver Newton, Marius Cautun, Adrian Jenkins, et al. The total satellite population of the Milky Way. *MNRAS*, 479(3):2853–2870, September 2018.

Oliver Newton, Marius Cautun, Adrian Jenkins, et al. The Milky Way's total satellite population and constraining the mass of the warm dark matter particle. *arXiv e-prints*, arXiv:1809.09625, September 2018.

Oliver Newton and Marius Cautun. MW Satellite LF: V1.0.0 release. Zenodo, March 2018.