

# Oliver Newton

## Curriculum Vitæ

Center for Theoretical Physics  
Polish Academy of Sciences  
Al. Lotników 32/46, 02-668 Warsaw, Poland  
✉ MusicalNeutron  
🌐 Musical-Neutron  
ID 0000-0002-2769-9507

### Employment & voluntary work

#### Vocational

- 2022– **Postdoctoral Fellow**, *Center for Theoretical Physics, Polish Academy of Sciences*, Warsaw, Poland.
- 2022 **PDRA (short-term)**, *Astrophysics Research Institute, Liverpool John Moores University*, Liverpool, UK.
- 2019–2021 **Postdoctoral researcher**, *Institut de Physique des Deux Infinis*, Lyon, France.
- 2014–2015 **Graduate Trading Platform Engineer**, *Fidessa*, Woking, UK.

#### Volunteering

- 2014–2020 **Founding trustee & Treasurer**, *UniBrass Foundation* (charity number: 1159359), UK.

### Education

- 2015–2019 **PhD**, *Institute for Computational Cosmology*, Durham, UK.  
*Probing the nature of dark matter with small-scale cosmology*  
Supervisors: Prof. Adrian Jenkins and Prof. Carlos Frenk
- 2010–2014 **BSc MPhys**, *University of Warwick*, Coventry, UK, *1st Class (Hons)*.  
Masters project: *Determining the fundamental properties of Higgs candidates at the LHC*

### Awards and scholarships

- 2019 **ICC Research Scholarship**, *Institute for Computational Cosmology*, Durham, UK.
- 2015–2019 **STFC Postgraduate Studentship**, *Institute for Computational Cosmology*, Durham, UK.

### Conference contributions

#### Contributed talks

- Sep 2022 **2nd Roman Juskiewicz Symposium**, *Nicolaus Copernicus Astronomical Center*, Warsaw, Poland.  
The undiscovered ultra-diffuse galaxies of the Local Group
- July 2022 **VIRGO Consortium meeting**, *MPA Garching*, Munich, Germany.  
Globular clusters as tracers of galaxy mergers
- July 2022 **CLUES Collaboration meeting (online)**, Madrid, Spain.  
The undiscovered ultra-diffuse galaxies of the Local Group
- Oct 2021 **Świeradów-Zdrój cosmology workshop**, Świeradów-Zdrój, Poland.  
Hermeian haloes: Field haloes that interacted with the Milky Way and M31
- July 2021 **CLUES Collaboration meeting (online)**, *AIP Potsdam*, Germany.  
Hermeian dark matter haloes of the Local Group
- July 2020 **EAS (online)**, Leiden, Netherlands.  
Constraining the properties of WDM using the satellite galaxies of the Milky Way
- Jan 2020 **VIRGO Consortium meeting**, Durham, UK.  
Constraining the properties of WDM using the satellite galaxies of the Milky Way
- Sep 2019 **CLUES Collaboration meeting**, *IN2P3*, Lyon, France.  
Constraints on thermal relic WDM from satellites of the Local Group
- July 2019 **Small Galaxies, Cosmic Questions**, Durham, UK.  
Constraints on the mass of the thermal relic warm dark matter particle

- Jan 2019 **DEX XV**, Edinburgh, UK.  
Constraints on the mass of the thermal relic warm dark matter particle
- Dec 2018 **VIRGO Consortium meeting**, Leiden, 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](#)
- July 2022 **EAS Meeting**, Valencia, Spain.  
The undiscovered ultra-diffuse galaxies of the Local Group
- June 2019 **EWASS**, Lyon, France.  
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

## Invited talks and seminars

- Oct 2022 **Astrophysics group seminar**, Lancaster University, UK.  
Exploring the Local Group using constrained simulations
- Nov 2021 **Astronomy seminar**, DTU Space, Copenhagen, Denmark.  
Hermeian haloes: Field haloes that interacted with the Milky Way and M31
- June 2021 **Small-scale structure seminar (online)**, Durham, UK.  
Hermeian dark matter haloes of the Local Group
- May 2021 **Stars, galaxies and cosmology café club (online)**, LAM Marseilles, France.  
Hermeian dark matter haloes of the Local Group
- Nov 2020 **Local Group (online)**, Durham, UK.  
Constraining the properties of WDM using the satellite galaxies of the Milky Way

## Supervising experience

- Sep 2022– Co-supervising PhD student, Feven M. Hunde  
Center for Theoretical Physics, Polish Academy of Sciences
- 2017–2019 Co-supervising two 4th year undergraduate student Master's theses  
Durham University

## Teaching experience

- Sep 2022 Delivered a workshop entitled 'Working with simulation outputs in PYTHON' to postgraduate students  
Center for Theoretical Physics, Polish Academy of Sciences

## Professional service

### Peer review

- 2022– The Astrophysical Journal (ApJ)
- 2021– Journal of Cosmology and Astroparticle Physics

### Institution

- 2021 **CLUES discussion meeting**, *Convener*, IP2I Lyon, France.  
2016–2017 **Postgraduate Journal Club**, *Co-convener*, Durham, UK.  
[Conferences and meetings](#)  
2018–2019 **Small Galaxies, Cosmic Questions LOC**, *Member*, Durham, UK.

## Memberships

- Jun 2022– Junior Member of the International Astronomical Union  
Oct 2019– Member CLUES Collaboration  
May 2017– Fellow of the Royal Astronomical Society, UK  
Oct 2015– Member Virgo Consortium

## 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.

## Computing

- Languages Python, HPC,  $\text{\LaTeX}$ , TCL, SQL, Microsoft Office suite  
Simulations AHF, SubFind, Gadget, AREPO

## Publications

- 2022 Anastasiia Osipova, Sergey Pilipenko, Stefan Gottlöber, et al., Hermeian haloes in cosmological volumes, *ArXiv e-prints*, September 2022, doi: [10.48550/arXiv.2209.07234](https://doi.org/10.48550/arXiv.2209.07234)  
**Oliver Newton**, Noam I Libeskind, Alexander Knebe, et al., Hermeian haloes: Field haloes that interacted with both the Milky Way and M31, *MNRAS*, 514(3):3612–3625, August 2022, doi: [10.1093/mnras/stac1316](https://doi.org/10.1093/mnras/stac1316)  
**Oliver Newton**, Hermeian paper plotting code, Zenodo, June 2022, doi: [10.5281/zenodo.6629724](https://doi.org/10.5281/zenodo.6629724)  
2021 Mark R Lovell, Marius Cautun, Carlos S Frenk, et al., The spatial distribution of Milky Way satellites, gaps in streams, and the nature of dark matter, *MNRAS*, 507(4):4826–4839, November 2021, doi: [10.1093/mnras/stab2452](https://doi.org/10.1093/mnras/stab2452)  
Wolfgang Enzi, Riccardo Murgia, **Oliver Newton**, et al., Joint constraints on thermal relic dark matter from strong gravitational lensing, the Ly  $\alpha$  forest, and Milky Way satellites, *MNRAS*, 506(4):5848–5862, October 2021, doi: [10.1093/mnras/stab1960](https://doi.org/10.1093/mnras/stab1960)  
**Oliver Newton**, Matteo Leo, Marius Cautun, et al., Constraints on the properties of warm dark matter using the satellite galaxies of the Milky Way, *JCAP*, 2021(08):062, August 2021, doi: [10.1088/1475-7516/2021/08/062](https://doi.org/10.1088/1475-7516/2021/08/062)  
2018 **Oliver Newton**, Marius Cautun, Adrian Jenkins, et al., The total satellite population of the Milky Way, *MNRAS*, 479(3):2853–2870, September 2018, doi: [10.1093/mnras/sty1085](https://doi.org/10.1093/mnras/sty1085)

**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, *Proc. IAU*, 14(S344):109–113, August 2018, doi: [10.1017/S1743921318006464](https://doi.org/10.1017/S1743921318006464)

**Oliver Newton** and Marius Cautun, MW Satellite LF: V1.0.0 release, Zenodo, March 2018, doi: [10.5281/zenodo.1205622](https://doi.org/10.5281/zenodo.1205622)