

Amber Loren Hornsby

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Research Interests

- Kinetic Inductance Detectors • Cosmic Microwave Background
- Superconductivity • RF Filter design • Instrumentation

Education

- 2016 - PhD in Physics & Astronomy at Cardiff University**
Multi-chroic Kinetic Inductance Detectors for Astronomy
Supervised by Simon Doyle (Cardiff) & Peter Barry (Argonne National Laboratory)
Expected submission March 2020
- 2012 - 2016 MPhys Astrophysics at Cardiff University, First Class**
Design and Simulation of Planar Superconducting Filtering Devices
Supervised by Simon Doyle (Cardiff)

Conferences

- Low Temperature Detectors, Milano (Italy) 2019**
Oral: Potential issues with stray light in antenna-coupled LEKIDs
- SPIE Astronomical Telescopes & Instrumentation, Texas (USA) 2018**
Oral: On-chip narrow-band filters for antenna-coupled LEKIDs
- Low Temperature Detectors, Fukuoka (Japan) 2017**
Poster: Optimisation of an antenna-coupled LEKID for future ground-based CMB experiments

Relevant skills

- Cryogenics (liquid helium and nitrogen) and the operation of pulse-tube coolers, vacuum pumps and leak checkers
- Trained to use suite of FT spectrometers (both commercial and research) and the associated data analysis
- Design, simulation and measurement of Kinetic Inductance Detectors and on-chip filtering structures
- Familiar with cleanroom protocols and microscope imaging
- Experience with Python, LabVIEW, Klayout, Advanced Design Systems (ADS) and Sonnet

Teaching

- 2016 - Demonstrator in experimental laboratories for first-year undergraduates**

Awards

- 2019** Languages for All outstanding achievement award in French
2018 Josephson Prize for outstanding contribution to community engagement

Key roles

- 2018 -** Editor of AstroNews for the Society of Popular Astronomy's magazine
2018 - Chair of Admin committee for Astrobites collaboration

- 2017 - Member of Astrobites collaboration
2018 Atoms to Galaxies team member for Pint of Science
2017 - 2019 School of Physics & Astronomy social committee
2017 - 2019 School of Physics & Astronomy colloquium organising committee
2016 - 2018 Organiser of the Astronomy Instrumentation Group's journal club

Outreach

- Summaries of the latest astronomy research published on Astrobites.org and in the Popular Astronomy magazine.
- Invited to give presentations to several local astronomical societies and at star parties
- Interviewed plenary speakers at AAS meetings for Astrobites to encourage student attendance
- Organised the Atoms to Galaxies stream of Pint of Science in 2018, which presented research from Cardiff University to the public
- Presented work on behalf of the Astronomy Instrumentation Group to A-level students

Publications

- A.L. Hornsby et al., "Reducing the susceptibility of antenna-coupled KIDs to two-level system effects", J. Low Temp, Phys., Under review 2019
- G. Khullar et al., "Astrobites as a Community-led Model for Education, Science Communication, and Accessibility in Astrophysics", Astro 2020 Decadal survey (2019)
- T.L.R. Brien et al., "MUSCAT: the Mexico-UK Sub-Millimetre Camera for AsTronomy", SPIE Astronomy Telescopes and Instrumentation, 10708 (2018).
- E. Castillo-Dominguez et al., "Mexico-UK Sub-millimeter Camera for AsTronomy", J. Low Temp, Phys. (2018)
- P.S. Barry et al., "Design and performance of the antenna coupled lumped-element kinetic inductance detector", J. Low Temp, Phys. (2018)
- A. Donohoe et al., "Electromagnetic modelling of a space-borne far-infrared interferometer", SPIE OPTO (2016)
- G. Savini et al., "Progress in Spectral-Spatial interferometry at supra-THz frequencies", Far Infrared Space Interferometer Critical Assessment – 3rd Workshop: Bringing Far Infrared Interferometry Into Vision (2015)
- P.A.R. Ade et al., "Progress in Spectral-Spatial interferometry at multi-THz frequencies – Potential applications", UCMMT (2015)
- R. J. Wylde et al., "The design, construction and measurement of a quasi-optical multiplexer and antenna for space-borne atmospheric measurements from 56 to 425 GHz", IRMMW-THz (2015)
- P. Moseley et al., "Metamaterial surfaces for THz optics – the next step: a focusing Wollaston prism and more." UCMMT (2014)

References available on request