

# Benjamin F. Cooke

RESEARCH FELLOW · UNIVERSITY OF WARWICK, ASTRONOMY AND ASTROPHYSICS

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## Education

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### University of Warwick

PHD ASTRONOMY AND ASTROPHYSICS

• Supervisor: Prof. Don Pollacco

Coventry, CV4 7AL, UK

Oct. 2017 - Apr. 2021

### University of Birmingham

MSc PHYSICS

• First-Class Honours

Birmingham, B15 2TT, UK

2013 - 2017

### Banbury Academy Sixth Form

A-LEVELS

• Physics: A, Maths: A\*, Further Maths: A, Chemistry: B

Banbury, OX16 9HY, UK

2011 - 2013

## Professional Experience

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2021-present **Research Fellow**, University of Warwick

2017-2021 **PhD**, University of Warwick

## Selected Publications

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### PUBLISHED - PRIMARY AUTHOR

**Benjamin F. Cooke**, Paul Chote, Don Pollacco et al. 2023. *Simulated recovery of LEO objects using sCMOS blind stacking*. *ASR*, 72:907.

**Benjamin F. Cooke**, Don Pollacco, David R. Anderson et al. 2021. *Resolving period aliases for TESS montransits recovered during the extended mission*. *MNRAS*, 500:5088.

**Benjamin F. Cooke**, Don Pollacco. 2020. *SpecPhot: A Comparison of Spectroscopic and Photometric Exoplanet Follow-Up Methods*. *MNRAS*, 495:734.

**Benjamin F. Cooke**, Don Pollacco and Daniel Bayliss. 2019. *An examination of the effect of the TESS extended mission on southern hemisphere montransits*. *A&A*, 631:A83.

**Benjamin F. Cooke**, Don Pollacco, Richard West et al. 2018. *Single site observations of TESS single transit detections*. *A&A*, 619:A175.

### PUBLISHED - CO-AUTHOR

James S. Jenkins, Matías R. Díaz, Nicolás T. Kurtovic et al. **(inc. Benjamin F. Cooke)**. 2020. *An ultrahot Neptune in the Neptune desert* *Nature Astronomy* 4:1148

David J. Armstrong, Théo A. Lopez, Vardan Adibekyan et al. **(inc. Benjamin F. Cooke)**. 2020. *A remnant planetary core in the hot-Neptune desert*. *Nature*, 483:39.

Samuel Gill, Peter J. Wheatley, **Benjamin F. Cooke** et al. 2020. *NGTS-11 b (TOI-1847 b): A Transiting Warm Saturn Recovered from a TESS Single-transit Event*. *ApJL*, 898:L11.

Samuel Gill, **Benjamin F. Cooke**, Daniel Bayliss et al. 2020. *A long-period ( $P = 61.8$  d) M5V dwarf eclipsing a Sun-like star from TESS and NGTS*. *MNRAS*, 495:2713.

Full list available on request or at <https://orcid.org/0000-0002-8824-9956>.

## Presentations

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**Oral Presentation: LEO object detection using blind stacking** NAM 2022, University of Warwick

**Oral Presentation: NGTS Follow-up of TESS Single Transits** PLATO ESP 2019, University of Warwick

**Poster: Monotransits in TESS - Predicted Yield and Early Results** UKEXOM 2019, Imperial College London

## Teaching Experience

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2017 - 2019 **Classical Mechanics and Special Relativity**, Undergraduate Problems Class *University of Warwick*  
Supervisor

## Research Experience

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**University of Warwick - Astronomy and Astrophysics** *Coventry, UK*  
SUPERVISOR: PROF. DON POLLACCO *Oct. 2017 - Apr. 2021*

- PhD thesis: "Simulation, detection and characterisation of monotransits from the TESS mission"

**University of Birmingham - Physics and Astronomy** *Birmingham, UK*  
SUPERVISORS: DR. ANDREA MIGLIO & DR. TIAGO CAMPANTE *2016-2017*

- Masters thesis: "The effect of convective core overshooting on the inferred masses of retired A-stars"

**University of Birmingham - Physics and Astronomy** *Birmingham, UK*  
SUPERVISORS: PROF. WILLIAM CHAPLIN & DR. TIAGO CAMPANTE *Summer 2016*

- Research project: "The impact of TESS asteroseismology on the characterisation of known exoplanet systems"

## Professional Development

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### CERTIFICATES AND AWARDS

**Winton Thesis Prize** - Recognising outstanding astrophysical research, 2022, University of Warwick.

**Postgraduate Award in Transferable Skills in Science** - 2021, University of Warwick

### PROPOSALS

**CNTAC Observing Time Proposal** - Towards a better understanding of Very Low Mass Stars. Contributing author, successful.

**STFC Grant Proposal** - The Next-Generation Transit Survey (NGTS) Operations 2019–2022. Contributing author, successful.

### OBSERVING EXPERIENCE

2021-2023 **CLASP**, Remote and in-person observer *Roque de los Muchachos*  
Jan. 2019 **HARPS-North, TNG**, Visiting observer *Roque de los Muchachos*  
Oct. 2018 **HARPS, ESO 3.6m**, Visiting observer *La Silla*  
2018 - 2019 **NITES**, Remote observer *Roque de los Muchachos*

### COMPUTING EXPERIENCE

**Python** 7 years experience.

**Bash** 5 years experience.

**C/C++ (Including CUDA and GPU use)** 3 years experience.

### RELEVANT SKILLS

**Problem Solving** - Tackled multiple novel problems through my PhD and research career

**Computational Simulations** - Developed simulations of unique, complex problems, displayed in my published works

**Data Analysis** - Displayed analysis experience of multi-source data sets, utilised in multiple publications

**Communication** - Both written and oral, demonstrated through published works and formal presentations

**Collaborations** - Member of the international NGTS consortium, author on multiple collaborative publications