JAMES BLAKE

Postgraduate Student (Research, full-time)

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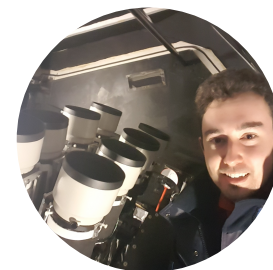
EXPERIENCE

Postgraduate Student (Research, full-time)
📅 Sept 2017 – Ongoing 📍 Dept. Physics, Uni. Warwick, UK

- Developing Python analysis pipelines to detect and characterise artificial debris in astronomical images of the geosynchronous region
- Astrodynamical simulations, orbital analysis and fitting

See my department webpage for further detail, including publications.

Senior Outreach and Recruitment Ambassador
📅 March 2014 – Ongoing 📍 SROAS Office, Uni. Warwick, UK

- Mentoring and tutoring for several WP outreach programmes, including Sutton Scholars, Brilliant Club, UniTracks and Realising Opportunities
- Planning and delivering outreach sessions for year 7–13 students in schools
- Developing communication skills through campus tours, open days, calling

Summer Research Intern
📅 2015, 2016 & 2017 📍 Dept. Physics, Uni. Warwick, UK

- Undertook three 10-week summer projects as part of the Undergraduate Research Support Scheme (URSS), in exoplanetary science and astrobiology
- Extensive use of Python for data analysis and/or modelling

Work Experience Placement
📅 Aug – Sept 2012 📍 Laser 2000 Ltd, Huntingdon, UK

- Received training as a prospective Sales Engineer, covering the theory and commercialisation of photonic equipment
- Entrusted with digitization of legal documents, carried out a research project

HIGHLIGHTS

Additional roles | Secretary for GNOSIS (2019–); UG Lab Marker (2017–20); Sales Assistant, Blue Inc (2014–16); Maths Tutor, Barrs Hill School, Coventry (2014–15); Fundraiser, St John's Ambulance, Carmarthenshire (2014)

Leadership | Technical session co-Chair at AMOS Conference, Hawai'i, US (2020); Co-founder and Vice-President of Warwick Astronomy Society (2016); Academic Coordinator for Warwick Physics Society (2016)

Event Management | Organised and coordinated the GNOSIS Precision SSA Virtual Workshop (2020, 60+ attendees); Coordinating events for audiences of 200+ visitors on open days; Organising UG revision lectures

Teaching & Outreach | Demonstrating for Python programming workshops; Co-supervising UG project students; Leading revision lectures for several UG modules; Visiting schools with a portable planetarium, delivering immersive and educational shows; Leading sessions for year 7–13 pupils on summer schools, residentials and school visits, promoting STEM subjects

Communication | Presented at 10+ nat'l/int'l conferences; Invited to give 10+ talks/seminars at nat'l/int'l venues; Alumni Panellist for ICUR, streamed internationally (2020); Confident speaker, excellent customer service

Publications & Media | Multiple peer-reviewed articles and conference proceedings, 3 as first author; Multiple press releases reaching 100+ news outlets across the globe – see e.g. BBC interview; Writer for The Conversation

Awards | Best Student Paper, AMOS Conference, Hawai'i, US (2019); Best Poster, Posters in Parliament, London, UK (2018); Significant Contribution to Outreach Activities, SROAS Office, Uni. Warwick, UK (2016)

Courses | EMER-GEN, Hawai'i, US (2020), mentoring from space industry experts; ESA Space Debris Training Course, Transinne, BE (2019); Warwick Ventures Innovation to Impact, Uni. Warwick, UK (2019)

PROFILE

I am a final-year Ph.D. Student at Warwick University. My work has focused on the development of software tools to detect and characterise artificial debris in optical telescope images.
I am also passionate about outreach, and have been involved in numerous efforts to promote HE and STEM in local schools.

EDUCATION

Ph.D. in Space Science | Uni. Warwick, UK
📅 Sept 2017 – Ongoing
Funding: Science & Technology Facilities Council
Supervisor: Don Pollacco

M.Phys. in Physics | Uni. Warwick, UK
📅 Sept 2013 – June 2017
Grade: First Class Honours
Key topics: Mechanics, Relativity, Quantum, Electricity & Magnetism, Materials, Computing, Electronics, Astronomy

A Levels & GCSEs | Wrenn Sixth Form, UK
📅 Sept 2010 – June 2013
A2: Maths (A*), Hist. (A*), Phys. (A), Chem. (A)
AS: Above 4(A), Furth. Maths (A), Phil. (B)
GCSE: 9(A*) incl. Maths, IT, Eng. Lang. & 5(A)

COMPUTING

○ github/jblake95 for projects

- **Operating systems**
  Linux, MacOS, Windows
- **Programming languages**
  Python, C, Bash
- **Selected libraries**
  NumPy, SciPy, Matplotlib, astropy, astroquery, SEP, datetime, rebound, Skyfield, ellc, emcee, pandas, json
- **Software packages**
  IRAF, SAOImage DS9, AstroImageJ, Astrometry.net, Origin Pro, MASTER, DRAMA
- **Developer tools**
  Git, PyCharm, Geany, Spyder
- **Word processing**
  LaTeX, Microsoft Office, Libre Office
- **Common tasks**
  Data analysis, image reduction and processing, database querying, modelling, simulations

REFERENCES

Available on request.