

# Charles Powell

cwp29@cam.ac.uk • cpowell@cwp.io • 07950 114819 • cwp.io

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## Education

- **University of Cambridge** **Cambridge, UK**  
*Mathematical Tripos MMath* *2020–Present*
    - Michaelmas courses: Fluid Dynamics of Climate, Slow Viscous Flow, Non-Newtonian Fluid Mechanics, Perturbation Methods.
    - Lent courses (TBC): Fluid Dynamics of Environment, Astrophysical Fluid Dynamics, Hydrodynamic Stability, Fluid Dynamics of the Solid Earth.

*Mathematics Tripos BA Hons (2:1)* *2017–2020*

    - Part II (3<sup>rd</sup> year) courses: Cosmology, Classical Dynamics, Dynamical Systems, Principles of Quantum Mechanics, Applications of Quantum Mechanics, Statistical Physics, General Relativity, Fluid Dynamics, Waves.
  - **Exeter Mathematics School** **Exeter, UK**  
*A-Levels* *2015–2017*
    - Mathematics, Further Mathematics, Computer Science, Physics: A\* (2017)
  - **Sidmouth College** **Sidmouth, Devon, UK**  
*GCSEs* *2013, 2015*
    - 8 A\* including Mathematics, Physics, Resistant Materials, Computing (2015)
    - 6 A including English, Statistics (2015), Astronomy (2013)
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## Experience

- **Mathematics Tripos Part II Computational Projects** **University of Cambridge, UK**
    - Simulation of Vortex Rings (Mark 40/40)
    - Accretion Discs (Mark 38/40)
    - Cosmological Distances (Mark 40/40)
    - Simulation of Classical Gases (Mark 39/40)
  - **Proceedings of the International Meteor Conference 2018** **Pezinok, Slovakia**  
*Editor* *Summer 2019*
  - **Exeter University Astrophysics Dept.** **Exeter, UK**  
*Radio Astronomy Research Engineer* *August & September 2019*
    - atmospheric moisture mapping using ADS-B aircraft tracking

*Radio Astronomy Research Engineer* *July & August 2017*

    - feedhorn design, GNUradio programming, pulsar detection

*Research Assistant* *July 2014*

    - numerical investigation of young stellar objects
  - **Norman Lockyer Observatory** **Sidmouth, Devon, UK**  
*Volunteer Software Developer* *2012–2018*
    - radio meteor detection spectrogram analysis
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## Publications

- Automated Spectrogram Analysis for Meteor Head Echoes C. Powell  
*WGN, the Journal of the IMO 47:2* *April 2019*
- International Meteor Conference 2018 report C. Powell  
*WGN, the Journal of the IMO 46:5* *October 2018*

- Temporal and Spatial Variation of Meteor Flux in Radio Data  
*WGN, the Journal of the IMO 45:4* C. Powell, K. Veljkovic  
August 2017
  - Modelling and Analysis of Diurnal Variation in Meteor Flux  
*WGN, the Journal of the IMO 45:2* C. Powell  
April 2017
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## Interests & Achievements

- **Fellow of the Royal Astronomical Society** **Elected 2017**
  - **Rowing** **Emmanuel Boat Club, Cambridge**  
*Captain of Boats & Men's Captain* 2019–2020
    - Management & organisation of a rowing club of approximately 80 members, operating at the top level of rowing among Cambridge colleges.
    - Coaching & development of novice and senior rowers, including development of a year-long training plan and external coaching guide.
    - Novice rower in October 2017, Lower Boats Captain 2018–2019, Captain of Boats & Men's Captain 2019–2020.
  - **Astronomy** **Norman Lockyer Observatory, Sidmouth, UK**  
*Presenter, Radio & Observational Astronomer* 2009–2018
    - Presentations on astronomy & physics topics including solar physics, special relativity, history of astronomy, quantum mechanics.
    - Data science & technological development in the UK's then leading amateur radio meteor detection station.
  - **Duke of Edinburgh Award** **Sidmouth College**  
*Bronze Award* 2013–2014
    - 3–6 months of volunteering, physical improvement, and development of a practical skill.
    - Group leader of 2 day self-sufficient walking expedition of the local area.
  - **Exeter Mathematics Certificate** **Exeter Mathematics School**  
*Mathematical Physics Projects* 2015–2017
    - Programming & mathematical projects working in conjunction
  - HAM Amateur Radio Examination, Foundational Level (2015)
  - Exeter & East Devon Ogden Physics Partnership: Physics Award (2015)
  - Sidmouth College Pinney Cup Award for Best Overall GCSE Results (2015)
  - UKMT Junior Maths Challenge Silver Award (2013, 2015), Gold Award (2014)
  - UKMT Senior Math Challenge Silver Award (2016), Gold Award (2017)
  - UK Bebras Computational Thinking Challenge Elite 16-18 Certificate of Distinction (2017)
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## Skills

**Programming / Markup Languages:** Python 2 & 3, L<sup>A</sup>T<sub>E</sub>X (experienced)  
MATLAB, R, JavaScript, PASCAL, Haskell (elementary)