Tom Kimpson

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Education

- **Ph.D. Candidate, Theoretical Astrophysics** **London, UK**
  Mullard Space Science Laboratory, University College London *2016 – Present*
  - Thesis: *On the detection and timing of Extreme Mass Ratio Pulsar-Black Hole binaries as probes of fundamental physics.*
  - Supervisor: Professor K. Wu
- **MPhys (*Hons.*), Physics and Astronomy (1^{st}*Class*)** **Durham, UK**
  Durham University *2012 – 2016*
  - Thesis: *Very High Energy Gamma Rays from Gamma Ray Bursts*
  - Supervisor: Professor P. Chadwick

Publications

- *Spatial Dispersion of light rays propagating through cold plasma in Kerr spacetime*.
  T. Kimpson, K. Wu, S. Zane. CQG. Submitted.
- *Hierarchical black hole triples in young star clusters: impact of Kozai-Lidov resonance on mergers*.
  T. Kimpson, M. Spera, M. Mapelli, B. Ziosi. MNRAS. doi: 10.1093/mnras/stw2085

Scientific Talks

- **Extreme Mass Ratio Pulsar-Black Hole Binaries**. Colloquium at INAF Cagliari *March 2018*

Grants, Scholarships and Awards

- **PHAROS Grant**. European Cooperation in Science and Technology *March 2018*
- **STFC PhD Studentship**. Science and Technologies Facilities Council *2016 – 2019*
- **Erasmus+ Grant**. Erasmus+ & European Commission *June 2015*

Research Visits

- **INAF Cagliari**, Italy *March 2018*
  Short-term scientific visit
  - Tuition in theoretical concepts relating to the detection and timing of radio pulsars.
  - Use of pulsar timing software and data analysis tools e.g. Tempo2
  - Exposure to the use of pulsar timing arrays for the detection of nanohertz gravitational waves.
- **INAF Padova & Padova University**, Italy *June – September 2015*
  Summer internship
  - Research within the Formation and Dynamics of Stars group investigating the merger of compact objects and the implications for gravitational wave emission.
  - Use of leading N-body code to simulate the formation and evolution of triple systems.
  - Calculation of increase in black hole merger rate due to Kozai-Lidov oscillations.

Other Employment

- **Data Scientist** **Prix, London**
  Summer internship *June – September 2016*
  - Early-hire at start-up using machine learning methods for dynamic pricing and revenue optimization in the SME market-space.
  - Independently researched and implemented Bayesian machine learning and reinforcement learning algorithms, including Multi-armed bandit and Q-learning methods.

Professional Activities, Outreach, and Service

- **Chair**. MSSL Astrophysics Journal Club *Jan 2018 - present*
- **Organizer**. MSSL Astrophysics Seminar series *Jan 2018 - present*
- **Postgraduate Marker**. UCL High Energy Astrophysics Masters course *Winter Term, 2017*

Skills

- **Computer Skills:** Python, Fortran, Mathematica, Bash.
- **Other scientific tools:** LaTeX, OpenMP, GNU Parallel, Git, Fermi Science Tools, Tempo2.

Scientific Workshops and Professional Development

- **Postgraduate Teaching Workshop**. UCL *September 2017*
- **Green Bank Telescope Training Workshop**. Green Bank, West Virginia, USA *May 2017*