

Tom Hands: Curriculum Vitae

Date of Birth: 21st June 1990

Citizenship: British Citizen

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Department of Physics & Astronomy

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RESEARCH INTERESTS

I am mainly interested in understanding the formation and subsequent evolution of extra-solar planets, and performing numerical modelling of this problem. In particular, I am currently using a combination of N -body, hydrodynamic and viscous accretion disc modelling techniques to gain insight into the observed distribution of exo-planets. I am also interested in the development and improvement of a wide variety of numerical techniques.

EDUCATION

2012–present **University of Leicester**

PhD in Astrophysics

- Provisional thesis title: “Assembling systems of multiple planets”.
- Supervisor: Dr. Richard Alexander, expected submission date: March 2016

2008–2012 *MPhys (Physics) with First Class Honours*

- Dissertation title: “The trajectory of emboli in the major cerebral arteries”.
- Supervisor: Dr. Emma Chung.

RESEARCH EXPERIENCE

Summer 2011 **University of Leicester**

Summer Studentship

- Title: “Artificial Conductivity in Smoothed Particle Hydrodynamics”.
- Supervisor: Prof. Walter Dehnen.

AWARDS

- Awarded departmental prize for being the top performing final year MPhys (Physics) student.
- STFC PhD studentship.

RESEARCH VISITS

2014/07 University of Surrey (2 days) - Host: Dr. Alessia Gualandris

TEACHING EXPERIENCE

2014 Acted as a demonstrator in a 3rd year C++ course, helping undergraduates to work through C++ problems.

SKILLS & EXPERIENCE

Computational:

- Experienced in C, C++, Python, R, and Java development.
- Working knowledge of FORTRAN.
- Wide variety of numerical modelling experience, including N -body and Smoothed Particle Hydrodynamics.
- Understanding of code development and optimisation on a variety of platforms, including parallel and vector computing.

Other:

- Languages: English (native), German (Up to ELP B2 level)

CONFERENCE ATTENDANCE & TALKS

- 2015/09 *Fifth Annual DiRAC Science Day*, Cambridge, UK ([Poster](#))
2015/07 *Disk Dynamics and Planet Formation*, Larnaka, Cyprus ([Poster](#))
2015/05 *Exoplanets in Lund 2015*, Lund, Sweden (Poster)
2015/04 *UK Community Exoplanet Conference 2015*, Warwick, UK (Contributed talk)
2015/03 *45th Saas-Fee Advanced Course: From Protoplanetary Disks to Planet Formation*, Les Diablerets, Switzerland ([Poster](#))
2014/09 *Visiting seminar*, University of Nottingham, Nottingham, UK
2014/09 *Planet Formation and Evolution*, Kiel, Germany ([Poster](#))
2014/07 *IAU symposium 310 on Complex Planetary Systems*, Namur, Belgium ([Poster](#))
2014/04 *Exoplanet UK Community Meeting*, Cambridge, UK ([Contributed talk](#))
2013/07 *UC-HiPACC International Summer School on AstroComputing: Star & Planet Formation*, Santa Cruz, CA, USA
2013/07 *Protostars and Planet VI*, Heidelberg, Germany ([Poster](#))
2013/03 *Characterising Exoplanets*, Royal Society, London, UK ([Poster](#))

OUTREACH EXPERIENCE

- 2014/08 *Halloween Physics Spooktacular* - University of Leicester
2014/04 *Exoplanet fly-by video* - YouTube video with over 60,000 views designed to demonstrate the vast variety of planetary systems to a general audience (https://www.youtube.com/watch?v=Nw_KfDEypTY).
2014/01 *Stargazing Live* - University of Leicester
2013 *ExoVis* - Developed the exoplanet visualisation tool *ExoVis* to aid with the visualisation of exoplanetary systems (<http://tomhands.com/exovis/>).

Tom Hands: Publication Record

SUMMARY

1 first-author, published, peer-reviewed journal article with 5 citations and a further paper submitted. 1 IAU conference proceedings.

REFEREED JOURNAL ARTICLES

- 2) *There might be giants: unseen Jupiter-mass planets as sculptors of tightly-packed planetary systems*

Hands, T. O., Alexander, R. D.

MNRAS, submitted

- 1) *Understanding the assembly of Kepler's compact planetary systems*

Hands, T. O., Alexander, R. D., Dehnen, W.

2014, MNRAS, 445, 749

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CONFERENCE PROCEEDINGS

- 1) *Understanding the assembly of Kepler's tightly-packed planetary systems*

Hands, T. O., Alexander, R. D., Dehnen, W.

2014, Complex Planetary Systems, Proceedings of the International Astronomical Union, 310, 90-92

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