

HAUKE WORPEL

PERSONAL INFORMATION

Born Rendsburg, Germany, 20 August 1982

email hauke.worpel@monash.edu

website <http://users.monash.edu.au/~hworpel/>

skype hauke.worpel

phone (H) +61 (03) 52 215 466 · (M) +61 0438 196 342

EDUCATION

Feb ²⁰¹¹⁻ *Sep 2014 (est)* Monash University, Melbourne

*Doctor of
Philosophy in
Astrophysics*

School: Mathematical Sciences

Thesis: *Radiation Drag on the Accretion Disc in Type-I Thermonuclear Bursts:
Observation and Modelling*

Description: In this thesis I explored the effect of radiation forces on accretion onto a neutron star during a Type I thermonuclear burst. I used archival data from the *Rossi X-Ray Timing Explorer* to look for evidence of accretion rate change in the X-ray spectra of these events. I ran SPH computer simulations of irradiated accretion discs to gain a theoretical understanding of radiation forces in thermonuclear bursts.

Mar 2009-Nov 2010 Monash University, Melbourne

*Graduate Diploma
in Science*

Diploma 87% · First Class Honours 83% · School: Physics/Mathematical Sciences

Thesis: *The Clustering of Galaxies around AGNs*

Description: This thesis investigated whether a galaxy's environment has any bearing on the presence or activity of radio AGN activity. I found that there is little difference in the environments of radio-loud and radio-quiet galaxies. This work resulted in publication.

Advisor: Dr. Michael BROWN

Summer 2009-2010 Australian National University, Canberra

*Summer Vacation
Scholarship*

School: Astronomy

Description: This research focused on spectroscopy of red giants in the Large Magellanic Cloud to identify distinct populations of stars and decipher the history of the LMC.

Advisors: Prof. Gary DA COSTA, Dr. Stefan KELLER

2000-2004 University of Melbourne

*Bachelor of
Science (Pure
Mathematics)*

School: Mathematics

REFEREED PUBLICATIONS

- Worpel, H.**, D. K. Galloway, and D. J. Price (Aug. 2013). "Evidence for Accretion Rate Change during Type I X-Ray Bursts". In: *ApJ* 772, 94, p. 94. DOI: [10.1088/0004-637X](https://doi.org/10.1088/0004-637X). arXiv:[1303.4824](https://arxiv.org/abs/1303.4824) [[astro-ph.HE](https://arxiv.org/abs/1303.4824)].
- Worpel, H.**, M. J. I. Brown, D. H. Jones, D. J. E. Floyd, and F. Beutler (July 2013). "The Clustering of Galaxies around Radio-loud Active Galactic Nuclei". In: *ApJ* 772, 64, p. 64. DOI: [10.1088/0004-637X](https://doi.org/10.1088/0004-637X). arXiv:[1305.2673](https://arxiv.org/abs/1305.2673) [[astro-ph.CO](https://arxiv.org/abs/1305.2673)].

SUBMITTED PUBLICATIONS

- Worpel, H.**, D. K. Galloway, and D. J. Price (2014 (submitted)). "Evidence for enhanced persistent emission during sub-Eddington thermonuclear bursts". In: *ApJ*.

OTHER

- Worpel, H.** and T. Hill (2013). "Astronomy in Review". In: *Australian Sky and Telescope* 9.8, pp. 30–36.

PRESENTATIONS

- 2014 · Oral presentation at ISSI meeting, Berne, Switzerland (30 min)
2014 · Poster at The X-Ray Universe conference, Dublin, Ireland
2013 · Oral Presentation at the Astronomical Society of Australia Conference, Monash University (10 min)
2013 · Oral presentation at ISSI South meeting, Melbourne, Australia (30 min)
2012 · Colloquia at SRON, Netherlands (30 m) and University of Oulu, Finland (45 min)
2012 · Oral presentation at ISSI meeting, Berne, Switzerland (30 min)
2012 · Poster at the Astronomical Society of Australia Conference
2011 · Poster at the Astronomical Society of Australia Conference

GRANTS AND SCHOLARSHIPS

- 2012-2014 · Australian Postgraduate Award (AUD 25,000 annually)

WORK EXPERIENCE

2013 Conference Organization

*Astronomical
Society of
Australia*

Member of the local organizing committee for the Annual Scientific Meeting of the Australian Astronomical Society held at Monash University in 2013, and the associated Harley Wood Winter School for postgraduate students.

2010–Present Sessional Tutor, MONASH UNIVERSITY

*Monash
University*

Taught tutorial classes in undergraduate astronomy, astrophysics, and engineering mathematics:
ENG 1091- Mathematics for Engineering- I took one to two classes of 20+ first-year students per semester from 2010 to 2013. The subject material covered vector geometry, matrices, sequences and series, and introductory differential equations.

I also performed exam marking.

ASP 3051- Relativity and Cosmology- Two classes of 15 third-year students in Semester 1, 2012. Students covered Einstein's Special Theory of Relativity, including the Minkowski metric, Lorentz transformations, k-calculus, and four-vectors; observation of the Universe relevant to Cosmology; the expansion of the Universe, the Cosmic Background Radiation; the evolution of the Universe, propagation of light; primordial elements and recent observations.

ASP 3012- Stars and Galaxies- One class of 15 third-year students in Semester 2, 2012. The subject material covered the reduced equations of stellar structure, polytropic equations of state, main sequence and post-main sequence stellar evolution, and galactic dynamics including dark matter.

2008–2009 Development Chemist, AKZO NOBEL —
Melbourne

Akzo Nobel Developed and tested protective paints for outdoor applications. Monitored and maintained long-term experiments in the weathering of paint.

2004–2008 Coatings Chemist, SIEGWERK — Melbourne

Siegwerk Developed and tested protective and decorative coatings for metal packaging products. Performed quality control on batches of product. Performed customer support at metal packaging plants.

COMPUTER SKILLS

C, Fortran, Python, IDL, Shell scripting, XSPEC, L^AT_EX

Languages ENGLISH · Fluent

GERMAN · Fluent

Other Member of Astronomical Society of Australia

August 26, 2014