Paul Chote

Curriculum Vitae

Contact

Department of Physics
University of Warwick
Gibbet Hill Road
Coventry
CV4 7AL
UK

mobile:
+44 7481 178055
work:
+44 2476 151862
email:
p.chote@warwick.ac.uk
skype:
pchote

Links

linkedin.com/in/pchote
github.com/pchote

Computing

Operating systems:
Linux, macOS, Windows

Programming Languages:
C, C#, Python, Bash, HTML, CSS, Javascript, Objective-C, Lua

Display APIs:
OpenGL, PGPLOT, Matplotlib

Embedded Systems:
AVR, ARM

Web Frameworks:
Flask, Django, JQuery

Grid Computing:
SGE, Condor, DRMAA

Version Control:
Git, SVN

Word Processing:
LaTeX, Microsoft Office

Education

Victoria University of Wellington (VUW), New Zealand

2011 – 2014 **Doctor of Philosophy** in Physics
2009 – 2010 **Master of Science** in Physics with Distinction
2008 – 2009 **Bachelor of Science** in Physics with First Class Honours
2005 – 2007 **Bachelor of Science** in Mathematics and Physics

Experience

2015–2018 **Department of Physics, Warwick University** Coventry, United Kingdom
Postdoctoral Research Fellow
Repair and automation of a 1m research telescope:
- Identified optical and mechanical faults and developed repair strategies.
- Developed hardware and low-level software interfaces for observatory systems.
- Designed and implemented data management and calibration pipeline.
- Developed web dashboards and tools using Python, Flask, and Django.

Identification of targets of interest in wide-area astronomical surveys:
- Developed a data analysis pipeline to clean observations from the iPTF survey and quantify photometric variability of stars from input catalogs.
- Developed a real-time analysis pipeline to detect transient astrophysical events and variable stars in the NGTS survey.

Acquired and analysed data of variable white dwarf stars.

2014–2015 **School of Chemical and Physical Sciences, VUW** Wellington, New Zealand
Research Assistant: 2D X-Ray Dosimeter Development
- Developed a 2D readout instrument for X-Ray sensitive films, adapting a 3D printer to hold a scanning laser and photon counting electronics.
- Characterised system properties including resolution, linearity, and noise levels.
- Created and characterised X-ray sensitive films in the lab.

2011 – 2014 **School of Chemical and Physical Sciences, VUW** Wellington, New Zealand
PhD. Research: CCD Time-Series Photometry of White Dwarf Stars
- Developed high-speed CCD time-series photometer instruments used with a 1 m telescope at Mt John observatory in New Zealand and the 2.1 m telescope at McDonald observatory in the USA.
- Created a CCD data reduction pipeline for real-time analysis and visualisation.
- Acquired time-series photometry of variable white dwarf (WD) targets.
- Analysis of targets included identification of WD pulsation modes, investigation of pulsation stability, and the consideration of convection effects.

2009 – 2010 **School of Chemical and Physical Sciences, VUW** Wellington, New Zealand
MSc. Research: A Semi-Analytical Model for Gravitational Microlensing
- Investigated techniques for calculating gravitational microlensing light curves.
- Developed and implemented a computationally efficient semi-analytical model for simulating gravitational microlensing events with up to four lens bodies.
- Implemented model support for orbital motion effects in the source, lens, and observer systems.

Summer 2008 **Research School of Astronomy and Astrophysics, Australian National University** Canberra, Australia
Summer Scholar: RSAA Instrumentation Group
- Worked with the team commissioning a new integral field spectrograph for the 2.3 m telescope at Siding Spring Observatory.
- Tested and documented an optical stimulus assembly that was used to simulate the telescope optics during instrument verification tests.
- Reduced archival CCD data using IRAF.

Summer 2007 **School of Chemical and Physical Sciences, VUW** Wellington, New Zealand
Summer Scholar: VUW Microlensing Group
- Adapted modelling code to run on University of Canterbury's BlueFern supercomputer and the VUW Condor computing grid.
- Compared the benefits of the available computing resources, and determined that the best results could be obtained with the local Condor grid.
- Investigated the impact of three lens masses on model light curves.

2007 – 2015 **School of Chemical and Physical Sciences, VUW** Wellington, New Zealand
Tutoring & Lab Development
- Demonstrated / tutored undergraduate laboratories (usually 2 – 10 students per session) across most of the core physics curriculum at VUW.
- Developed a time-series photometry experiment using a CCD camera and LEDs driven by a microcontroller to mimic variable stars.
- Developed a numerical simulation experiment investigating light bending around black holes and gravitational microlensing.
- Overhauled and modernized several existing experiments.

2010 – ongoing **Open Source Software**
Core maintainer of the OpenRA project.
- Open source Real Time Strategy game engine.
- Gameplay recreating classic Command & Conquer games.
- Volunteer role includes aspects of project management, public relations, mentoring, and performing code review.

Awards

2016 **Merit Award** University of Warwick
Award for exceptional performance during the 2015 – 2016 year.

2014 **Royal Society Marsden Scholarship** Royal Society of NZ
Funding for tuition fees and a stipend during a 3 year PhD degree.

Victoria Doctoral Completion Award Victoria University of Wellington
Awarded for successful PhD completion on schedule.

2009 **Victoria Master's Scholarship** Victoria University of Wellington
Awarded based on academic merit to fund tuition fees and a stipend during a 1 year masters degree.

2008 **VUW Graduate Award** Victoria University of Wellington
Awarded on the basis of academic merit to support graduate degree study.

Mike Collins Scholarship in Physics Victoria University of Wellington

2005 **Ormond Wilson Scholarship** Victoria University of Wellington

J Mills Family Scholarship J Mills Family Trust
Award for Dux of Karamu High School in 2004.

Publications

First-author refereed publications:

2016 **The post-outburst pulsations of the accreting white dwarf in the cataclysmic variable GW Librae**
Chote, P., and Sullivan, D.J. 2016, MNRAS, 458, 1393. DOI:10.1093/mnras/stw421

2014 **Puoko-nui: a flexible high-speed photometric system**
Chote, P., et al. 2014, MNRAS, 440, 1490. DOI:10.1093/mnras/stu348

2013 **Time series photometry of the helium atmosphere pulsating white dwarf EC 04207-4748**
Chote, P., et al. 2013, MNRAS, 431, 520. DOI:10.1093/mnras/stt180

Selected co-authored refereed publications:

2016 **Long-term eclipse timing of white dwarf binaries: an observational hint of a magnetic mechanism at work**
Bours, M. C. P., et al. 2016, MNRAS, 460, 3873. DOI:10.1093/mnras/stw1203

An asteroseismic constraint on the mass of the axion from the period drift of the pulsating DA white dwarf star L19-2
Córsico, A.H., et al. 2016, JCAP, 07, 036. DOI:10.1088/1475-7516/2016/07/036

High-speed Photometry of the Disintegrating Planetesimals at WD1145+017: Evidence for Rapid Dynamical Evolution
Gänsicke, B. T., et al. 2016, ApJ, 829, 82. DOI:10.3847/2041-8205/818/1/L7

Outbursts in Two New Cool Pulsating DA White Dwarfs
Bell, K. J., et al. 2016, ApJ, 818, L7. DOI:10.3847/0004-637X/829/2/82

GW Librae: Still Hot Eight Years Post-outburst
Szkody, P., et al. 2016, AJ, 152, 48. DOI:10.3847/0004-6256/152/2/48

2015 **Insights into internal effects of common-envelope evolution using the extended Kepler mission**
Hermes, J. J., et al. 2015, MNRAS, 451, 1701. DOI:10.1093/mnras/stv1053

A Second Case of Outbursts in a Pulsating White Dwarf Observed by Kepler
Hermes, J. J., et al. 2015, ApJ, 810, L5. DOI:10.1088/2041-8205/810/1/L5

2014 **Radius constraints from high-speed photometry of 20 low-mass white dwarf binaries**
Hermes, J. J., et al. 2014, ApJ, 792, 39. DOI:10.1088/0004-637X/792/1/39

Found: the progenitors of AM CVn and supernovae .Ia
Kilic, M., et al. 2014, MNRAS, 439, L26. DOI:10.1093/mnrasl/slt151

2012 **HST and Optical Data Reveal White Dwarf Cooling, Spin, and Periodicities in GW Librae 3-4 Years after Outburst**
Szkody, P., et al. 2012, ApJ, 753, 158. DOI:10.1088/0004-637X/753/2/158

Full list available at `http://adsabs.harvard.edu/cgi-bin/basic_connect?qsearch=Chote%2C+P`

Other publications:

2015 **Simulating the photometric study of pulsating white dwarf stars in the physics laboratory**
Chote, P., and Sullivan, D.J. 2015. `https://arxiv.org/abs/1502.01767`

2014 **CCD Time-Series Photometry of White Dwarf Stars**
Chote, P. 2014, PhD. Thesis, Victoria University of Wellington.
`http://researcharchive.vuw.ac.nz/handle/10063/3512`

2011 **A Semi-Analytical Model for Gravitational Microlensing**
Chote, P. 2011, MSc. Thesis, Victoria University of Wellington.
`http://researcharchive.vuw.ac.nz/handle/10063/1890`

Conference Presentations:

2017 **Oral Presentation** NGTS Project Meeting, Leicester, UK
GW Librae in NGTS.

2016 **Oral Presentation** 20th European White Dwarf Workshop, Warwick, UK
The post-outburst pulsations of GW Librae

Poster 20th European White Dwarf Workshop, Warwick, UK
The Warwick one-metre telescope

2012 **Oral Presentation** 18th European White Dwarf Workshop, Krakow, Poland
New Time-Series Observations of the Intriguing Object GW Librae.

Poster 18th European White Dwarf Workshop, Krakow, Poland
The Puoko-nui CCD Time-Series Photometer.

2011 **Oral Presentation** Royal Astronomical Society Conference, Wellington, NZ
High precision CCD time-series photometry.

Oral Presentation New Zealand Institute of Physics Conference, Wellington, NZ
Time Series Photometry of Pulsating White Dwarf Stars.

References

Available on request.