Universiteit
Leiden
The Netherlands

Inferno Worlds

Ridden - Harper, A.

Citation
Ridden - Harper, A. (2018, November 21). *Inferno Worlds*. Retrieved from https://hdl.handle.net/1887/67080

Version:	Not Applicable (or Unknown)
License:	Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden
Downloaded from:	https://hdl.handle.net/1887/67080

Note: To cite this publication please use the final published version (if applicable).

Cover Page

Universiteit Leiden

The handle http://hdl.handle.net/1887/67080 holds various files of this Leiden University dissertation.

Author: Ridden, - Harper A.
Title: Inferno Worlds
Issue Date: 2018-11-21

Curriculum Vitae

I was born on the 6th of August 1991 in Christchurch, Canterbury, New Zealand, and grew up in the neighbouring satellite town of Rolleston. In my youth, this area had relatively little light pollution, which may have contributed to my interest in astronomy.

I have always been interested in science, but it was during high school at Hagley Community College when I started to favour physics and astronomy. During my latter years of high school, I became involved with the Canterbury Astronomical Society, where I learned how to use my own small reflecting telescope, used larger amateur telescopes and volunteered at public open nights at the R. F. Joyce Observatory in West Melton.

I started studying physics and astronomy at the University of Canterbury in 2010 where I completed a four-year Bachelor of Science with First Class Honours degree[1] in astronomy. While at the University of Canterbury, I did my bachelor and honours research projects and a summer research project with Professor Peter Cottrell on investigating the chemical evolution of giant stars in globular clusters with multi-object spectroscopic data from the Robert Stobie Spectrograph on the Southern African Large Telescope. During the university summer break of 2010, I worked as a tour guide at the astro-tourism company Earth and Sky Ltd. in the New Zealand town of Lake Tekapo, located in the Aoraki Mackenzie International Dark Sky Reserve. In this role I showed visually appealing astronomical objects to visitors through telescopes, while explaining their significance and physical properties.

I was awarded summer research scholarships at the Australian National University in 2012 and 2013. My first project there was supervised by Dr. Elizabeth Wylie de Boer and invovled testing the spectral fitting codes used in the GALactic Archaeology with HERMES (GALAH) project. My second project there was supervised by Dr. Frank Mills and involved benchmarking a photochemistry code that simulated the upper atmosphere of Venus.

[1] This is a typical Ph.D. preparation programme in New Zealand and Australia, and is similar to the four year integrated masters degree in the UK.

I started my Ph.D. at Leiden Observatory in June 2014 under the guidance of Professors Ignas Snellen and Christoph Keller. During my Ph.D., I have worked on: searching for gas in the exosphere of the hot super Earth, 55 Cancri e (Chapter 2), simulating the dust tail of the disintegrating rocky exoplanet, Kepler-1520 b (Chapters 3 & 4) and searching for gas that was lost from the disintegrating rocky exoplanet, K2-22 b (Chapter 5). During this time, I have presented my research at international conferences in Canada, the United Kingdom, Switzerland, and the Czech Republic.

As of the 26th of November 2018, I will be a post doctoral researcher in the group of Professor Ray Jayawardhana at Cornell University in the United States of America.

List of publications

- **A. R. Ridden-Harper**, I. A. G. Snellen, C. U. Keller, P. Mollière, *Search for gas from the disintegrating rocky exoplanet K2-22b*, A&A, *submitted*
- **A. R. Ridden-Harper**, C. U. Keller, M. Min, R. van Lieshout, I. A. G. Snellen, *Chromatic transit light curves of disintegrating rocky planets,* A&A, *in press* (2018)
- R. van Lieshout, M. Min, C. Dominik, M. Brogi, T. de Graaff, S. Hekker, M. Kama, C. U. Keller, **A. R. Ridden-Harper** and T. I. M. van Werkhoven, *Dusty tails of evaporating exoplanets II. Physical modelling of the KIC 12557548b light curve*, A&A 596, A32 (2016)
- **A. R. Ridden-Harper**, I. A. G. Snellen, C. U. Keller, R. J. de Kok, E. Di Gloria, H. J. Hoeijmakers, M. Brogi, M. Fridlund, B. L. A. Vermeersen and W. van Westrenen, *Search for an exosphere in sodium and calcium in the transmission spectrum of exoplanet 55 Cancri e*, A&A 593, A129 (2016).

Acknowledgements

The road leading to the completion of a Ph.D. is sometimes bumpy. However, my journey along this road was made a little less bumpy by some special people, many of whom are mentioned here.

I would first like to thank my supervisors, Ignas Snellen and Christoph Keller. I will always be grateful to both of you for your patience, approachable personalities, and guidance in all aspects of academic life.

Next, I would like to thank my parents. You always did whatever you could to help me succeed and encouraged me to follow my dreams, even though they took me to the other side of the world. I am also grateful to my brother, Ryan. Thanks for your support and for always being willing to talk about whatever was on my mind. Good luck with finishing your own Ph.D.!

I would also like to thank the people that keep the institute running smoothly. In particular, thanks to Evelijn Gerstel for her helpful insight into financial matters, the secretariat staff for their support on a wide range of day-to-day activities, and Erik Deul and the computer systems support group for quickly resolving my technical issues. I am also grateful to Xander Tielens for his support and encouragement in the final months of my Ph.D.

To my colleagues in the exoplanet research group: Geert Jan Talens, Dilovan Serindag, Sebastiaan Haffert, Patrick Dorval, Paul Mollière, Francisco Javier Alonso Floriano, Alex Cridland, Aurélien Wyttenbach and to those who were previously part of the group: Vincent van Eylen, Paul Wilson, Jens Hoeijmakers, Emanuele Di Gloria, Henriette Schwarz, Remco de Kok, Matteo Brogi, Julien Spronck, Anna-Lea Lesage & Jayne Birkby, I have followed your research with interest and have greatly enjoyed and benefited from your suggestions and comments on my own work. Thanks also to Michiel Min, Rik van Lieshout and Ernst de Mooij for our fruitful collaborations.

To Claudia-Corina Giese, Vincent Kofman, Kaustubh Hakim, Kateryna (Katya) Frantseva, Lucas Patty, Edgar Steenstra, Loïc Rossi, Yue Zhao and Maaike Damen and all my other colleauges in the Planetary and ExoPlanetary Science (PEPSci) network, thanks for all of the great interdisiplinary presentations and discussions

that really broadened my perspectives on planetary science. Special thanks to: Alex Cridland, Bram Mooij, Nina Poplawska-Kopacz and Teresa Steinke for taking over the organizational duties now that the 'old guard' is leaving.

To the bachelor and masters students that I have had the pleasure of helping to supervise: Esmee Stoop, Michelle Willebrands, Matt Fields, and Jianfei Liang, I really enjoyed our stimulating discussions and being impressed by your nice results!

To the friends that I made during my Ph.D.: Chris Barber (Batman), Zoe Sharp, Christian Eistrup, Iris Nijman, Ann-Sofie Bak Nielsen, Jeroen Franse, Eva Bøgelund, Niels Ligterink, Michael Wilby, Charlotte Moss, Nico Blok-Salinas, Wijnand Blok-Salinas, Jorryt Matthee, Valeria Korol, Luke Maud, Aayush Saxena, Mieke Paalvast, Gabriela (Gabby) Calistro Rivera, Marco Velliscig, Soumyajit (Jit) Mandal, Andrej Dvornik, Eleonora Zari, Clément Bonnerot, Allison Hill, David Carton, Heather Andrews Mancilla, Sierk van Terwisga, Christos Georgiou, Maria Cristina Fortuna, Pedro Salas Munoz, Santiago Torres Rodriguez, Kimberly Emig, Joshua (Josh) Albert & Tommaso Marchetti. I am very grateful for all of the fun and good times that we've had with things like getting ice-cream after lunch, movie and board game nights, borrels, parties, and complaining about the Dutch weather ;) Also, thanks to Marissa Rosenberg and Tiffany Meshkat for really making me feel welcome during my first few months in Leiden.

To my office mates, past and present: Tim Shimwell, Yannick Bahé, Bruno Ribeiro, Caroline D'Angelo & Adam Muzzin, thanks for making our office a pleasant place to work. Also, thanks to my ex-officemate Ricardo Herbonnet for our interesting discussions and strolls in the fresh air.

To my old University of Canterbury friends Robert Culling, Edward Ashton and Benedict Morrissey, thanks for encouraging me with your interest in my research. Also, thanks to my fellow Kiwis in the Netherlands: Aaron Greenwood, Alexander Rimoldi and Alan Heays, for discussing New Zealand matters with me and letting me hear that familiar accent.