Robert Ridgway

robbieridgway@gmail.com ORCID: 0000-0001-5534-0561
1-587-896-4346
RobertRidgway.github.io — Updated April 2024

SKILLS AND EXPERIENCE

- Programming; Python (NumPy, Matplotlib, SciPy), Fortran (10 years)
- UNIX environment (5 years)
- Research (8 years)
- Model development (8 years)
- Project management (8 years)
- Group collaboration (7 years)
- Scientific writing (6 years)
- Git, SVN (4 years)
- Atmospheric chemistry (gas phase) (4 years)
- Planetary science (4 years)
- General Climate Models (GCMs) (4 years)
- MS Office (10 years)
- MS Windows environment (10 years)

WORK EXPERIENCE

Undergraduate Teaching Assistant, University of Calgary, 9/2015 – 12/2017

- Assisted in teaching of 20-30 second year undergraduates in physics labs and computer science
- Demonstrated use of UNIX commands, analysis of experimental results, scientific use of Python, & report writing

P.U.R.E. Summer Research Studentship, University of Calgary, 5/2014 – 8/2014 — Supervisor: Prof. Rene Plume

Awarded P.U.R.E. Summer Research Studentship

- Worked on characterising the D/H ratio of star-forming regions of the Orion Nebula
- Experiences in scientific modelling and data analysis

EDUCATION

PhD in Physics, University of Exeter, 10/2018 – 6/2023 — Supervisors: Prof. Nathan Mayne, Dr. James Manners, Dr. Maria Zamyatina, Prof Hugo Lambert

- Thesis Title: Simulating the impact of stellar flares on the climate and habitability of terrestrial Earth–like exoplanets
- Used the Met Office Unified Model (UM) to look at the climate of exoplanets in 3D
- Combined a chemical kinetics scheme with a photolysis scheme and the UM to look at the effects of stellar flares on terrestrial planets in 3D

Master of Science in Space Physics, University of Calgary, 9/2015 – 9/2018 — Supervisor: Prof. Brian Jackel

- Thesis Title: Estimating the Density of Plasma in the Dayside Magnetosphere
- Degree Conferred: November 16th, 2018
- Analysis of the usage of travel-time magnetoseismology to construct density profiles of the near-Earth plasma environment
- Used magnetometer data from the GOES and THEMIS spacecraft to look at determining the relative travel-times of signals through the magnetosphere

Bachelor of Science in Astrophysics Honours First Class, University of Calgary, 9/2011 – 5/2015

FIRST AUTHOR PUBLICATIONS

Robert J. Ridgway, Maria Zamyatina, Nathan J. Mayne, James Manners, F. Hugo Lambert, Marrick Braam, Benjamin Drummond, Eric Hébrard, Paul I. Palmer, and Krisztian Kohary. 3D modelling of the impact of stellar activity on tidally–locked terrestrial exoplanets: atmospheric composition and habitability, Monthly Notices of the Royal Astronomical Society, 518, 2472, November 2022, ISSN 0035-8711, doi:10.1093/mnras/stac3105

CO-AUTHOR PUBLICATIONS

Marrick Braam, Paul I. Palmer, Leen Decin, **Robert J. Ridgway**, Maria Zamyatina, Nathan J. Mayne, Denis Sergeev, and N. Luke Abraham. Lightning-induced chemistry on tidally-locked Earth-like exoplanets. Monthly Notices of the Royal Astronomical Society, 186, 227, September 2022, ISSN 0035-8711, doi:10.1093/mnras/stac2722

Benjamin Drummond, Eric Hébrard, Nathan J. Mayne, Olivia Venot, **Robert J. Ridgway**, Quentin Changeat, Shang-Min Tsai, James Manners, Pascal Tremblin, Nathan Luke Abraham, David Sing, and Krisztian Kohary. Implications of three-dimensional chemical transport in hot Jupiter atmospheres: Results from a consistently coupled chemistry-radiation-hydrodynamics model. Astronomy & Astrophysics, 636:A68, April 2020. ISSN 0004-6361. doi:10.1051/0004-6361/201937153

Ian A. Boutle, Manoj Joshi, F. Hugo Lambert, Nathan J. Mayne, Duncan Lyster, James Manners, **Robert Ridgway**, and Krisztian Kohary. Mineral dust increases the habitability of terrestrial planets but confounds biomarker detection. Nature Communications 11, 2731, June 2020. ISSN 2041-1723. doi:10.1038/s41467-020-16543-8

Jake K. Eager, David J. Reichelt, Nathan J. Mayne, F. Hugo Lambert, Denis E. Sergeev, **Robert J. Ridgway**, James Manners, Ian A. Boutle, Timothy M. Lenton, and Krisztian Kohary. Implications of different stellar spectra for the climate of tidally locked Earth-like exoplanets. Astronomy & Astrophysics, 639:A99, July 2020. ISSN 0004-6361. doi:10.1051/0004-6361/202038089

Aurélien Falco, Pascal Tremblin, Sébastien Charnoz, **Robert J. Ridgway**, and Pierre-Olivier Lagage. Hydrogenated atmospheres of lava planets: Atmospheric structure and emission spectra. Astronomy & Astrophysics, 683:A194, March 2024. ISSN 0004-6361. doi:10.1051/0004-6361/202347650

SCIENTIFIC TALKS & CONFERENCES

2 contributed conference talks, 4 contributed conference posters.

September 2022, UK Exoplanet Community Meeting (UKEXOM) 2022, Contributed Talk
July 2022, Rocky Worlds II, Contributed Poster
December 2021, American Geophysical Union (AGU) Fall Meeting, Contributed Poster
April 2021, UK Exoplanet Community Meeting (UKEXOM) 2021, Contributed Talk
December 2016, American Geophysical Union (AGU) Fall Meeting, Contributed Poster
June 2015, Canadian Association of Physicists (CAP) Congress, Contributed Poster

COMPETITIVE SCHOLARSHIPS & AWARDS

Alberta Graduate Student Scholarship - $3000 CAD	2017
Queen Elizabeth II Graduate Scholarship (Master's) - $3600 CAD	2016
Queen Elizabeth II Graduate Scholarship (Master's) - $10800 CAD	2016
University of Calgary Undergraduate Merit Award - $750 CAD	2014
P.U.R.E. (Program for Undergraduate Research Experience) - $6000 CAD	2014
Jason Lang Scholarship - $1000 CAD (x3)	2012, 2013, 2014
Alexander Rutherford Scholarship - $2500 CAD	2011
University of Calgary Entrance Scholarship - $1250 CAD	2011

TEACHING EXPERIENCE

Undergraduate Teaching Assistant, 9/2015 – 12/2017

- Assisted in teaching of 20-30 second year undergraduates in physics labs and computer science
- Demonstrated use of UNIX commands, analysis of experimental results, scientific use of Python, & report writing

REFERENCES

Prof. Nathan Mayne, University of Exeter, N.J.Mayne@exeter.ac.uk
Dr. James Manners, Met Office, james.manners@metoffice.gov.uk
Dr. Maria Zamyatina, University of Exeter, M.Zamyatina@exeter.ac.uk