Dominic M. Bowman

PhD., MSci. (Hons), FRAS, MInstP

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I. Personal Statement

Currently I am an FWO senior postdoctoral research fellow in the Institute of Astronomy at KU Leuven. My primary research focus is asteroseismology of high- and intermediate-mass stars. The analysis of stellar pulsations reveals tight constraints on interior physics such as rotation, mixing and angular momentum transport. My expertise includes the extraction and analysis of photometric and spectroscopic data from space- and ground-based telescopes, and forward seismic modelling of pulsating stars. I am passionate and actively develop teaching at the BSc, MSc and PhD level, and advocacy and outreach activities for all ages and backgrounds.

My undergraduate studies at the University of Birmingham inspired me to pursue a research career in asteroseismology. I completed my PhD at the University of Central Lancashire in the UK under the supervision of Prof. Donald Kurtz, and my thesis was published as a Springer monograph. I published a first-author paper in Nature Astronomy on my postdoctoral research at KU Leuven, Belgium, which was selected as the cover image for the August 2019 issue. In May 2020, I was awarded the prestigious KU Leuven Research Council Award in Science, Engineering and Technology for my breakthrough research in asteroseismology of massive stars. In November 2020, I began a prestigious and competitive 3-yr FWO research fellowship based at KU Leuven.

II. Education

Postgraduate degree, PhD Oct 2013 – Nov 2016
PhD in astronomy with thesis title: *Amplitude modulation and energy conservation of pulsation modes in delta Scuti stars*, awarded on 21 November 2016 by the University of Central Lancashire, Preston, UK. My supervisor was Prof. Donald Kurtz and I was funded by the UK Science and Technology Facilities Council (STFC). I passed my PhD defence outright with no corrections about six months ahead of schedule.

Undergraduate degree, MSci Sept 2009 – June 2013
First class integrated Master (BSc + MSc) in Science (M.Sci.) degree with honours in physics and astrophysics from the University of Birmingham in the UK, with an award date of 8 July 2013.

III. Employment

FWO Senior Postdoctoral Fellowship 1 Nov 2020 – date
Institute of Astronomy, KU Leuven, Celestijnenlaan 200D, 3001 Leuven, Belgium. Independent and personal mandate funded by Fonds Wetenschappelijk Onderzoek (FWO) Vlaanderen (grant agreement N^{o} 1286521N).

Postdoctoral Research Associate 1 Feb 2017 – 31 Oct 2020
Institute of Astronomy, KU Leuven, Celestijnenlaan 200D, 3001 Leuven, Belgium. Funded by the European Union's Horizon 2020 research and innovation programme (grant agreement N^{o} 670519: MAMSIE, PI Aerts).

Lecturer in Astronomy 19 Sept 2016 – 13 Jan 2017
Jeremiah Horrocks Institute, University of Central Lancashire, Preston, PR1 2HE, United Kingdom.

IV. Scientific Prizes and Awards

FWO Long Stay Abroad Oct - Dec 2021
I was awarded a competitive FWO grant for a long research stay abroad to cover all costs for my invited visit to KITP, California, USA for 3 months in 2021, for a total of approximately €6000.

KU Leuven Research Council Award (POR) May 2020
Annual prestigious and highly-competitive prize for only one postdoctoral researcher in STEM from KU Leuven awarded for my research in massive star asteroseismology, which included €20 000 of research funding.

Springer Thesis Award Oct 2017
My PhD thesis was published in the Springer thesis series in 2017 for 'Outstanding PhD Research'. This prestigious prize allowed me to expand my thesis into a monograph and included a cash prize.

Small Travel Grants
I have been successful in numerous travel bursary applications to external funding bodies for attending international conferences, which include STFC and RAS in the UK, CNRS in France and FWO in Belgium. The combined total of these travel grants is approximately €5000.

V. Conference Organisation

TASC6/KASC13, *Leuven, Belgium* 11 – 15 July 2022
Chair of the LOC for the TASC6/KASC13 conference of the asteroseismic community, which was held in Leuven, had 200 in-person and 100+ online participants. Postponed from 2020 because of the COVID-19 pandemic.

EAS 2021, *Virtual (hosted by Leiden University, the Netherlands)* 28 June – 2 July 2021
Co-Chair of the SOC of the symposium titled "Massive stars: birth, rotation, and chemical evolution" at the EAS 2021 meeting, which had more than 100 participants.

MOBSTER-1, *Virtual (hosted by University of Delaware, USA)* 13 – 17 July 2020
Co-Chair of the SOC for the virtual MOBSTER-1 conference, which had more than 170 participants. Format was changed to a virtual conference because of the COVID-19 pandemic.

EAS 2020, *Virtual (hosted by Leiden University, the Netherlands)* 29 June – 3 July 2020
Chair of the SOC of the special session titled "New insights of angular momentum transport in stellar interiors" held on 1 June during the EAS 2020 meeting, which had more than 100 participants. Format was changed to a virtual conference because of the COVID-19 pandemic.

STARS2016, *Windermere, UK* 11 – 15 Sept 2016
Principal organiser (Chair of the LOC) for the STARS2016 conference which celebrated the scientific career of Prof. Donald Kurtz and had more than 75 participants. The budget was approximately €50 000, and successful grant applications included €3500 from the RAS and €8000 from UCLan for this meeting.

VI. Personal Training

Anti-Racism in Astronomy and Geophysics, *Virtual, (hosted by RAS)* 12 Aug 2021
Seminars and training sessions on anti-racism initiatives in academia.

Sex and Gender Dimensions in Frontier Research, *Virtual (hosted by ERCEA)* 16 Nov 2020
Seminars and training sessions on diversity initiatives in academia.

Voice of the future, *Westminster, London, UK* 15 Mar 2017
I was an ECR representative of the RAS to attend this meeting on bridging scientists and UK politicians.

STFC careers event, *Institute of Physics, London, UK* 21 Oct 2015
I was successful in my application for an STFC travel grant for the costs of attending.

Media training for outreach, *Royal Society, London, UK* 7 Oct 2015
I was successful in my application for an STFC bursary for the costs of attending.

VII. International Responsibilities and Committees

WG Chair, Arago space mission Jan 2022 – date

Chair of the 'Hot (BA) Stars' working group for the Arago mission, which is a proposed M7 ESA space mission on UV+Visible spectropolarimetry of stars across the HR diagram.

Associate Editor, Frontiers Feb 2021 – date

Editorial board member and Associate Editor for the journal *'Frontiers in Astronomy and Space Sciences'* and Review Editor for the journal *'Frontiers in Physics'*.

ULLYSES WG12 chair Dec 2020 – date

Point of contact (chair) of WG12: pulsations of ULLYSES targets and XShootU collaboration.

Good Vibrations seminar series Nov 2020 – date

Steering committee member for the Good Vibrations seminar series, which promotes and provides opportunities for PhD students to share their research internationally.

co-PI MOBSTER collaboration Nov 2020 – date

Together with PI Alex David-Uraz and co-PI Coralie Neiner, we are in charge of organising and maximising the scientific productivity of the MOBSTER collaboration, which leverages TESS data to identify and study massive magnetic stars.

SHOC@SAAO pipeline developer July 2020 – date

I am the principal author of the TEA-PHOT pipeline to reduce and extract light curves from the SHOC imager at SAAO. The TEA-PHOT pipeline is published: Bowman & Holdsworth (2019, A&A 629, A21), and is fully endorsed by the SAAO instrument team as the go-to reduction pipeline.

RAS ECN committee member June 2020 – date

Secretary for the Early Careers Network (ECN) of the UK Royal Astronomical Society (RAS).

BEST member Sept 2019 – date

Non-voting member of the BRITE Executive Science Team (BEST) for the BRITE-constellation space mission.

Scientific co-PI and Mission Scientist, CubeSpec space mission Jan 2019 – date

Scientific co-PI and mission scientist for the development and implementation of the massive star asteroseismology science case for the CubeSpec cubesat mission being built by KU Leuven in collaboration with ESA and private contractors.

PLATO external reviewer Nov 2020

External reviewer for the on-ground data processing algorithms on behalf of the complementary science program (WP16) of the ESA PLATO mission.

VIII. Scientific Organisation Membership

Junior Member of the International Astronomical Union (IAU) since January 2020.

Member of the European Astronomical Society (EAS) since April 2019.

Fellow of the Royal Astronomical Society (FRAS) since October 2013.

Member of the Institute of Physics (MInstP) since October 2013.

IX. Observing Projects and Experience

European Southern Observatory (ESO), *Chile*
14 nights of observing experience as visiting astronomer in December 2019 using the FEROS spectrograph mounted on the 2.2-m MPG/ESO telescope at the La Silla observatory, ESO.

- Co-I of ESO programme obtaining multi-epoch high-resolution spectroscopy of gamma Doradus stars with UVES *(106.21S8.001; 106.21S8.002; 106.21S8.003; 21 hr; PI Christophe)*.
- Co-I of MPG/ESO programme obtaining multi-epoch high-resolution spectroscopy of massive binary stars with FEROS *(0106.A-9106; 90 hr; PI Aerts)*.
- Co-I of ESO large programme obtaining multi-epoch high-resolution spectroscopy of massive stars with UVES *(1104.D-0230; 120 hr; PI Tkachenko)*.
- Co-I of MPG/ESO programme obtaining multi-epoch high-resolution spectroscopy of massive stars with FEROS *(0104.A-9001; 120 hr; PI Aerts)*.
- Co-I of ESO DDT obtaining phase-resolved high-resolution spectroscopy of the pulsating eclipsing binary system U Gru with UVES *(103.200F; 4 hr; PI Johnston)*.

Transiting Exoplanet Survey Satellite (TESS), *NASA*

- PI of three TESS Guest Investigator proposals obtaining high-precision and short-cadence time series photometry of massive stars in cycle 3 in 2020 *(GO3059; 1058 stars; PI Bowman)*, cycle 4 in 2021 *(GO4074; 1618 stars; PI Bowman)*, and cycle 5 in 2022 *(GO5036; 1818 stars; PI Bowman)*.
- Co-I of multiple TESS Guest Investigator proposals obtaining high-precision and short-cadence time series photometry of intermediate- and high-mass stars in cycles 1–5.

South African Astronomical Observatory (SAAO), *Sutherland, South Africa*
21 nights of observing experience as visiting astronomer in May and June 2017 using the SHOC imager mounted on the 1-m telescope at SAAO to obtain high-cadence photometry of roAp stars.

- PI of service time proposal to gain high-cadence photometry of candidate roAp stars in May 2018.

Mercator Observatory, *La Palma, Spain*
65 nights of observing experience using the HERMES and MAIA instruments on the 1.2-m Mercator telescope between 2017 and 2022, which includes visitor mode and service observing.

- PI of HERMES large program awarded 1000+ hr across 2022-2025 to obtain multi-epoch spectroscopy of pulsating massive stars discovered by TESS.
- PI of HERMES proposal awarded 80 hr in semester 2021a to obtain time-series spectroscopy of high-mass pulsating eclipsing binaries discovered by TESS.
- PI of MAIA proposal awarded 120 hr in semester 2020b to obtain short-cadence multi-colour time-series photometry of roAp stars observed by K2 and TESS.
- PI of HERMES proposal awarded 70 hr in semester 2018b, 35 hr in semester 2019a and 90 hr in semester 2019b to obtain spectroscopy of Ap stars being observed by TESS.
- PI of a HERMES proposal awarded 60 hr in semester 2018a to obtain accurate stellar parameters for pulsating B, A and F stars in the *Kepler* field for forward seismic modelling.
- PI of a HERMES proposal awarded 40 hr in semester 2017a and 20 hr in semester 2018a to study high-mass companions to δ Sct stars in binary systems discovered using pulsation timing.

Moses Holden Telescope (MHT), *UCLan, Preston, UK*
20 nights of observing experience using the imager on the 0.75-m MHT in 2016 and 2017.

William Herschel Telescope (WHT), *La Palma, Spain*

- PI of service time proposal in 2016 to gain accurate $T_{\rm eff}$ values for 23 δ Sct stars observed by *Kepler*.

X. Teaching and Supervision Experience

PhD theses, *KU Leuven, Belgium*
Supervisor of **1** PhD student to completion and **1** ongoing PhD student, and member of a further **3** PhD supervisory/examination committees.

- Examination committee (jury) member of Mathias Michielsen — Nov 2022
  Forward seismic modelling of B-type stars
- **Co-supervisor** of Jordan Van Beeck — Sept 2019 – date
  Application of non-linear asteroseismology to Kepler and TESS photometry
- Progress committee member of Joris Hermans — Sept 2019 – date
  Solar flux ropes and tornadoes
- Examination committee (jury) member of Camilla Scolini — May 2020
  Magnetised Coronal Mass Ejections: evolution from the Sun to 1 AU and geo-effectiveness
- **Supervisor** of Siemen Burssens — Sept 2018 – July 2022
  Massive star asteroseismology with K2 and TESS
- Progress and examination committee (jury) member of Joey S. G. Mombarg — Feb 2018 – Feb 2022
  Asteroseismic modelling of intermediate-mass stars
- Long-stay host research supervisor of Mariel Lares-Martiz — Sept 2019 – Dec 2019
  Non-linear terms in Delta Scuti stars power spectra

Master theses, *KU Leuven, Belgium*
Supervisor of **5** MSc students to completion and **1** ongoing MSc student, and member of a further **5** supervisory/examination committees.

- **Supervisor** of Pieterjan Van Daele — Sept 2022 – date
  New algorithms to extract blended TESS photometry of massive stars
- Examination committee member (reader) of Thijs Verhaeghe — June 2022
  A Target Scheduling Heuristic for CubeSpec
- **Supervisor** of Stijn Rutten — Sept 2021 – Sept 2022
  A new user-friendly aperture photometry pipeline for MAIA: variability in pulsating stars
- **Supervisor** of Nagaraj Vernekar — Sept 2020 – Sept 2021
  On the photometric and spectroscopic variability of Be stars: the case of HD 93683
- Examination committee member (reader) of Anne Daniels — June 2021
  Permutation entropy and statistical complexity to characterise space plasmas
- Examination committee member (reader) of Mariya Nizovkina — June 2021
  Investigating the effect of microturbulent velocity on mass discrepancy in the binary system V380 Cyg
- Examination committee member (reader) of Tinatin Baratashvili — June 2020
  On the effect of grid stretching and AMR on inner heliospheric solar wind and CME evolution simulations
- **Supervisor** of Joris Hermans — Sept 2018 – June 2019
  Testing stellar evolution with selected high-amplitude delta Scuti stars
- **Supervisor** of Sven Nys — Sept 2018 – June 2019
  Asteroseismic modelling of gravity modes in selected intermediate-mass stars
- **Co-supervisor** of Jordan Van Beeck — Sept 2018 – June 2019
  The influence of an interior magnetic field on gravity-mode oscillations of intermediate-mass stars
- Examination committee member (reader) of Mathias Michielsen — June 2018
  Comparing oscillation frequencies of stars with a convective core: Impact of varying input physics

Master Level Courses and Modules

- **Lecturer**, *KU Leuven, Belgium* Sept 2022 – Sept 2023
  Responsible person for delivering MSc Asteroseismology course (6 ECTS).
- **Lecturer**, *KU Leuven, Belgium* Sept 2019 – date
  Responsible person for delivering the MSc thesis defence preparation course.

Undergraduate (Bachelor) Level Courses and Modules

- **Bachelor and master student projects**, *KU Leuven, Belgium* Sept 2017 – date
  Supervision of multiple bachelor and master student projects in asteroseismology.
- **Guest Lecturer**, *University of Innsbruck, Austria* May 2021
  Lecture on massive stars for asteroseismology course of Prof. Konstanze Zwintz.
- **Module Examiner**, *KU Leuven, Belgium* Sept 2017 – July 2019
  Examiner for the Bachelor science communication and MSc Asteroseismology courses.
- **Lecturer**, *UCLan, UK* Sept 2016 – Jan 2017
  Responsible person for delivering first-year Bachelor 'Introduction to Statistics' (MA1861; 6 ECTS), 'Stellar Structure and Evolution' (AA1051; 6 ECTS), and organisation of second-year Bachelor astronomy laboratories at UCLan's Alston observatory (AP2060; 6 ECTS).

XI. Scientific Conferences and Workshops

Attendance of **40** international conferences and workshops.

TASC6/KASC13, *Leuven, Belgium* 11 – 15 July 2022
Chair of the LOC of the annual asteroseismic consortium meeting.

IAUS361: Massive Stars Near and Far, *Ballyconnell, Ireland* 8 – 13 May 2022

KITP program, *Santa Barbara, California, USA* 11 Oct – 17 Dec 2021
I was successful in my application for an FWO long stay abroad grant to cover the costs. This program also included a conference between 11-18 November at which I was an invited panellist speaker.

TESS SciCon II, *Virtual (hosted by MIT, USA)* 2 – 6 Aug 2021

BRITE-related Science Meeting, *Virtual (hosted by Innsbruck University, Austria)* 12 July 2021

EAS 2021, *Virtual (hosted by Leiden University, the Netherlands)* 28 June – 2 July 2021
Co-Chair of the SOC of symposium 16 (S16) titled "Massive stars: birth, rotation, and chemical evolution".

IAUS361: mini-symposium on massive stars, *Virtual (hosted by DIAS, Ireland)* 3 – 7 May 2021

OBA stars: Variability and Magnetic Fields, *Virtual (hosted by St. Petersburg)* 26 – 30 April 2021
Invited speaker on the topic of asteroseismology of O and B stars.

Pulsations in Multiple Systems, *Virtual (hosted by University of Surrey, UK)* 18 – 22 Jan 2021
Invited speaker on the topic of asteroseismology of OBAF stars.

MOBSTER-1, *Virtual (hosted by University of Delaware, USA)* 13 – 17 July 2020
Co-Chair of the SOC for the first conference of the MOBSTER collaboration.

EAS 2020, *Virtual (hosted by Leiden University, the Netherlands)* 29 June – 3 July 2020
Chair of the SOC for the special session 5 (SS5) titled: "New insights of angular momentum transport in stellar interiors" at the EAS2020 conference.

Stars and their Variability, *Vienna, Austria* 19 – 23 Aug 2019
Invited speaker on the topic of asteroseismology of O and B stars.

TESS Sci Con I, *MIT, Cambridge, USA* 29 July – 2 Aug 2019

TASC5/KASC12, *MIT, Cambridge, USA* 22 – 26 July 2019

Stellar Hydro Days V, *Exeter, UK* 24 – 28 June 2019

STFC/MAMSIE mini-workshop, *Leuven, Belgium* 2 – 4 April 2019

Kepler/K2 Sci Con V, *Glendale, California, USA* 4 – 8 March 2019

TESS data workshop, *KU Leuven, Belgium* 5 – 9 Nov 2018

STFC/MAMSIE mini-workshop, *Leuven, Belgium* 29 – 31 Oct 2018

MASSIVE star meeting, *Leuven, Belgium* 4 – 6 Oct 2018

PHOST, *Banyuls-sur-mer, France* 3 – 7 Sept 2018

TASC4/KASC11, *Aarhus University, Denmark* 8 – 13 July 2018
Invited speaker on the topic of asteroseismology of A and F stars. I was successful in my application for an FWO conference participation grant to cover the travel costs.

Statistics workshop, *KU Leuven, Belgium* 11 June 2018

STFC/MAMSIE mini-workshop, *Newcastle University, UK* 5 – 8 June 2018

Belgian contact group meeting, *Brussels, Belgium* 4 June 2018

MAMSIE/STFC workshop, *KU Leuven, Belgium* 14 – 16 March 2018

TESS data workshop, *KU Leuven, Belgium* 6 – 8 Dec 2017

MAMSIE/STFC workshop, *KU Leuven, Belgium* 12 – 15 Sept 2017

MESA Summer school, *UCSB, California, USA* 14 – 18 Aug 2017

TASC3/KASC10, *University of Birmingham, UK* 17 – 21 July 2017

STARS2016, *Windermere, UK* 11 – 15 Sept 2016
Chair of the LOC celebrating the scientific contributions of Prof. Donald Kurtz.

TASC2/KASC9 workshop, *Terceira-Açores, Portugal* 27 June – 1 July 2016
My application for the defrayment of my registration fee was successful.

National Astronomy Meeting (NAM), *Nottingham University, UK* 11 – 15 July 2016

STFC spectroscopy school, *Queen's University Belfast, UK* 31 Aug – 4 Sept 2015
My accommodation and subsistence costs were funded by STFC.

KASC8/TASC1 workshop, *Aarhus University, Denmark* 15 – 19 June 2015
I was successful in my application for an RAS travel grant for half the total costs.

RAS specialist discussion meeting, *RAS, London, UK* 8 May 2015
Invited speaker on the topic of pulsations in delta Scuti stars observed by Kepler.

K2 data workshop, *(Virtual) Aarhus University, Denmark* 10 – 11 Nov 2014

Ecole Evry Schatzman 2014, *Roscoff, France* 28 Sept – 3 Oct 2014
My accommodation and subsistence costs were funded by CNRS.

CoRoT3/KASC7 meeting, *Toulouse, France* 6 – 11 July 2014
My application for the defrayment of my registration fee was successful.

Spectroscopy workshop, *Aarhus University, Denmark* 19 – 23 May 2014
My application for an RAS travel grant for half the total costs was successful.

XII. Conference Talks, Seminars and Colloquia

Total of **8 invited** and **11 contributed** talks at international conferences and **17** seminars/colloquia.

Conference Talks

- IAUS361: Massive Stars Near and Far (Contributed), *Ballyconnell, Ireland* — 10 May 2022
- Transport in Stellar Interiors (**Invited**), *KITP, UCSB, USA* — 15 Nov 2021
- Transport in Stellar Interiors (**Invited**), *KITP, UCSB, USA* — 12 Oct 2021
- TESS SciCon II (Contributed), *Virtual (hosted by MIT, USA)* — 3 Aug 2021
- BRITE-related Science Meeting (**Invited**), *Virtual (hosted by Uni. Innsbruck, Austria)* — 12 July 2021
- IAUS361 mini-symposium (Contributed), *Virtual (hosted by DIAS, Ireland)* — 3 May 2021
- OBA stars: variability and magnetic fields (**Invited**), *Virtual (hosted by St. Petersburg)* — 30 April 2021
- PIMMS workshop (**Invited**), *Virtual (hosted by University of Surrey, UK)* — 18 Jan 2021
- Stars and their Variability (**Invited**), *Vienna, Austria* — 19 Aug 2019
- TESS Sci Con I (Contributed), *MIT, Cambridge, USA* — 30 July 2019
- TASC5/KASC12 (Contributed), *MIT, Cambridge, USA* — 23 July 2019
- Stellar Hydro Days V (Contributed), *Exeter, UK* — 26 June 2019
- Kepler/K2 Sci Con V (Contributed), *Glendale, California, USA* — 7 March 2019
- MASSIVE star meeting (Contributed), *Leuven, Belgium* — 4 Oct 2018
- PHOST conference (Contributed), *Banyuls-sur-mer, France* — 6 Sept 2018
- TASC4/KASC11 workshop (**Invited**), *SAC, Aarhus University, Denmark* — 13 July 2018
- STARS2016 conference (Contributed), *Windermere, UK* — 14 Sept 2016
- KASC8/TASC1 workshop (Contributed), *SAC, Aarhus University, Denmark* — 15 June 2015
- RAS specialist discussion meeting (**Invited**), *RAS, London, UK* — 8 May 2015

Seminars and Colloquia

- (Virtual) Chinese University of Hong Kong — 2 June 2022
- (Virtual) MPA, Germany — 20 April 2022
- (Virtual) University of Geneva, Switzerland — 14 April 2022
- (Virtual) Sheffield University, UK — 6 Oct 2021
- KU Leuven, Belgium — 1 Oct 2021
- (Virtual) Keele University, UK — 19 May 2021
- (Virtual) Nicolaus Copernicus Astronomical Center, Poland — 21 April 2021
- (Virtual) KITP, California, USA — 16 Dec 2020
- KU Leuven, Belgium — 22 March 2019
- Newcastle University, UK — 6 June 2018
- Université Libre de Bruxelles, Belgium — 19 April 2018
- KU Leuven, Belgium — 2 March 2018

- Royal Observatory of Belgium, Belgium — 16 Nov 2017
- University of Central Lancashire (UCLan), UK — 15 June 2016
- SAC, Aarhus University, Denmark — 2 May 2016
- University of Central Lancashire (UCLan), UK — 15 July 2015
- Keele University, UK — 4 Sept 2014

XIII. Public Engagement and Outreach

I am passionate about public engagement and outreach in science, but particularly in astronomy. I have organised and assisted in over 50 outreach events for school students and amateur astronomer societies in the UK and Belgium reaching thousands of people. It is enjoyable and rewarding to engage with young students and members of the public and discuss astronomy at various levels. I am dedicated to continuing to provide high-calibre outreach activities throughout my career.

Whilst at UCLan in the UK, my outreach events included supervising visitors using the modern 0.7-m telescope at Alston Observatory and giving visitors an interactive tour of the night sky using the modern planetarium. I also visited primary and secondary schools to give talks and run astronomy-themed group activities.

Notable outreach activities I have performed whilst at KU Leuven include:

- Teaching Fellow of the World Science Scholar program of the World Science Foundation for the academic year 2022-2023, in which 50+ gifted and talented high school aged students from across the globe are selected to expand their mathematical abilities within inspiring university-level topics led by world-renowned scientists.
- Ongoing participant of the Scientist@School program, for which I provide astronomy-themed talks and activities for local Belgian schools, with classes up to approximately 30 students aged 14–18.
- Ongoing participant of the Skype a Scientist program, for which I regularly discuss astronomy online with international participants, including school classrooms and families.
- A series of short popular-science videos in collaboration with Huawei and Pint of Science Belgium for the "5-minute science you never knew" playlist of the 'What Makes it Tick?' YouTube channel.
- Interviewed for the Astronomer job profile for the UK prospects career advice website in 2021.
- Guest lecturer in stellar physics for the Vereniging Voor Sterrenkunde Zomerschool for 30–40 students aged 16–18 in August 2017, 2018 and 2020.
- Co-author of (Dutch) article for the September 2019 issue of the popular astronomy magazine Heelal.
- Invited speaker at two Pint of Science events in Brussels on 7 and 21 May 2019, each with more than 100 attendees.
- Workshops on space exploration and the solar system at the KU Leuven Kids University, for 30 students aged 8–13 on 5 May 2018 and 22 October 2022.
- Workshops on Exoplanets, Habitability and Host Star Variability for the Ladies@Science 2017 event, hosted at KU Leuven for 40 students aged 14–16 on 19 April 2017.

XIV. Peer-Reviewed Scientific Publications

As of 2 Nov 2022, my citation metrics are:

Google scholar: 2410 citations and h-index of 32 **NASA ADS:** 2163 citations and h-index of 31

Total of **14** peer-reviewed papers as first-author, and **60** as co-author (of which **18** as second or third author).

Submitted papers currently under review:

- W. R. Thompson, F. Herwig, P. R. Woodward, H. Mao, P. Denissenkov, **D. M. Bowman**, S. Blouin, *(submitted, MNRAS)*, *'3D hydrodynamic simulations of massive main-sequence stars II. Convective excitation and spectra of internal gravity waves'*
- T. Van Reeth, C. Johnston, J. Southworth, J. Fuller, **D. M. Bowman**, L. Poniatowski, J. Van Beeck, *(submitted, A&A)*, *'Tidally perturbed g-mode pulsations in a sample of close eclipsing binaries'*
- R. Monier, E. Niemczura, D. W. Kurtz, S. Rappaport, **D. M. Bowman**, S. J. Murphy, Y. Lebreton, R. Stuik, M. Deal, T. Merle, T. Kiliçoğlu, M. Gebran, E. Le Ster, *(submitted, AJ)*, *'The surface composition of six newly discovered chemically peculiar stars. Comparison to the HgMn stars μ Lep and β Scl and the superficially normal B star ν Cap'*
- T. Shenar, G. Wade, P. Marchant, S. Bagnulo, J. Bodensteiner, **D. M. Bowman**, A. Gilkis, N. Langer, A. Nicholas-Chené, L. Oskinova, T. Van Reeth, H. Sana, N. St-Louis, A. Soares de Oliveira, H. Todt, S. Toonen, *(submitted)*, *'A strongly magnetic super-Chandrasekhar mass helium star'*
- R. Monnier, **D. M. Bowman**, Y. Lebreton, M. Deal, *(submitted, ApJ)*, *'The unexpected optical and ultraviolet variability of the standard star α Sex (HD 87887)'*
- **D. M. Bowman**, T. Z. Dorn-Wallenstein, *(submitted, A&A)*, *'Photometric detection of internal gravity waves in upper main-sequence stars. III. Comparison of Gaussian processes and amplitude spectrum fitting'*
- S. Burssens, **D. M. Bowman**, M. Michielsen, S. Simón-Díaz, C. Aerts, G. Banyard, N. Nardetto, R. H. D. Townsend, G. Handler, J. S. G. Mombarg, R. Vanderspek, G. Ricker, *(submitted)*, *'Asteroseismology of the β Cep star HD 192575: a unique anchor of angular momentum transport in massive stars'*

Accepted papers currently in press:

- C. Johnston, A. Tkachenko, T. Van Reeth, **D. M. Bowman**, K. Pavlovski, H. Sana, S. Sekaran, *(in press, A&A)*, *'Tidal perturbations and geometric effects on the pulsations in the hierarchical triple system U Gru'*
- O. Kobzar, V. Khalack, D. Bohlender, G. Mathys, M. Shultz, **D. M. Bowman**, E. Paunzen, C. Lovekin, A. David-Uraz, J. Sikora, P. Lampens, O. Richard, *(in press, MNRAS)*, *'Analysis of eight magnetic chemically peculiar stars with rotational modulation'*
- J. Tayar, F. D. Moyano, M. Soares-Furtado, A. Escorza, M. Joyce, S. L. Martell, R. A. García, S. N. Breton, S. Mathis, S. Mathur, V. Delsanti, S. Kiefer, S. Reffert, **D. M. Bowman**, T. Van Reeth, S. Shetye, C. Gehan, S. K. Grunblatt, *(in press, ApJ)*, *'Spinning up the Surface: Evidence for Planetary Engulfment or Unexpected Angular Momentum Transport?'*
- J. Southworth, **D. M. Bowman**, *(in press, Observatory)*, *'Rediscussion of eclipsing binaries. Paper X. The pulsating B-type system V1388 Orionis'*

Published articles:

- S. Gebruers, A. Tkachenko, **D. M. Bowman**, T. Van Reeth, S. Burssens, L. IJspeert, L. Mahy, I. Straumit, M. Xiang, H.-W. Rix, C. Aerts, (2022), A&A, 665, A36, *'Analysis of high-resolution FEROS spectroscopy for a sample of variable B-type stars assembled from TESS photometry'* [ADS link]
- L. Mahy, H. Sana, T. Shenar, M. Abdul-Masih, G. Banyard, J. Bodensteiner, **D. M. Bowman**, K. Dsilva, M. Fabry, C. Hawcroft, N. Langer, P. Marchant, T. Van Reeth, C. Eldridge, (2022), A&A, 664 A159, *'Identifying quiescent compact objects in massive Galactic single-lined spectroscopic binaries'* [ADS link]

- Z. T. Spetsieri, P. Boumis, A. Chiotellis, S. Akras, S. Derlopa, S. Shetye, D. M.-A. Meyer, **D. M. Bowman**, V. V. Gvaramadze, (2022), MNRAS Volume 515, Issue 1, 1544–1556, *'Discovery of an optical cocoon tail behind the runaway HD 185806'* [ADS link]
- J. A. Toalá, **D. M. Bowman**, T. Van Reeth, H. Todt, K. Dsilva, T. Shenar, G. Koenigsberger, S. Estrada-Dorado, L. M. Oskinova, W.-R. Hamann, (2022), MNRAS, Volume 514, Issue 1, 2269–2277, *'Multiple variability time-scales of the early nitrogen-rich Wolf-Rayet star WR7'* [ADS link]
- J. Southworth, **D. M. Bowman**, (2022), MNRAS, Volume 513, Issue 3, pp. 3191-3209, *'High-mass pulsators in eclipsing binaries observed using TESS'* [ADS link]
- T. Van Reeth, J. Southworth, J. Van Beeck, **D. M. Bowman**, (2022), A&A, 659, A177, *'V456 Cyg: an eclipsing binary with tidally perturbed g-mode pulsations'* [ADS link]
- D. Lecoanet, **D. M. Bowman**, T. Van Reeth, (2022), MNRAS Letters, Volume 512, Issue 1, L16-L20, *'Asteroseismic inference of the near-core magnetic field strength in the main-sequence B star HD 43317'* [ADS link]
- **D. M. Bowman**, B. Vandenbussche, H. Sana, A. Tkachenko, G. Raskin, T. Delabie, B. Vandoren, P. Royer, S. Garcia, T. Van Reeth, and the CubeSpec collaboration, (2022), A&A, 658, A96, *'The CubeSpec space mission. I. Asteroseismology of massive stars from time-series optical spectroscopy: Science requirements and target list prioritisation'* [ADS link]
- K. Pavlovski, C. A. Hummel, A. Tkachenko, A. Derviçoğlu, C. Kayhan, R. T. Zavala, D. J. Hutter, C. Tycner, T. Şahin, J. Audenaert, R. Baeyens, J. Bodensteiner, **D. M. Bowman**, S. Gebruers, N. E. Jannsen, J. S. G. Mombarg, (2022), A&A, 658, A92, *'Dynamical parallax, physical parameters and evolutionary status of the components of the bright eclipsing binary α Draconis'* [ADS link]
- A. Elliott, N. D. Richardson, H. Pablo, A. F. J. Moffat, **D. M. Bowman**, N. Ibrahim, G. Handler, C. Lovekin, A. Popowicz, N. St-Louis, G. A. Wade, K. Zwintz, (2022), MNRAS, Volume 509, Issue 3, 4246–4255, *'Five years of BRITE-Constellation photometry of the prototypical luminous blue variable P Cygni: constraining the stochastic low-frequency variability'* [ADS link]

2021: 2 first author and 12 co-author publications

- **D. M. Bowman** and M. Michielsen, (2021), A&A, 656, A158, *'Towards a systematic treatment of observational uncertainties in forward asteroseismic modelling of gravity-mode pulsators'* [ADS link]
- J. Van Beeck, **D. M. Bowman**, M. G. Pedersen, T. Van Reeth, T. Van Hoolst, C. Aerts, (2021), A&A, 655, A59, *'Detection of non-linear resonances among gravity modes of slowly pulsating B stars: Results from five iterative pre-whitening strategies'* [ADS link]
- J. Audenaert, J. S. Kuszlewicz, R. Handberg, A. Tkachenko, D. Armstrong, M. Hon, R. Kgoadi, M. N. Lund, K. J. Bell, L. Bugnet, **D. M. Bowman**, C. Johnston, R. A. García, D. Stello, L. Molnár, E. Plachy, D. Buzasi, C. Aerts, and the T'DA collaboration, (2021), AJ, Volume 162, Issue 5, id.209, *'TESS Data for Asteroseismology (T'DA) Stellar Variability Classification Pipeline: Set-Up and Application to the Kepler Q9 Data'* [ADS link]
- D. L. Holdsworth, M. S. Cunha, D. W. Kurtz, V. Antoci, D. R. Hey, **D. M. Bowman**, O. Kobzar, D. L. Buzasi, O. Kochukhov, E. Niemczura, D. Ozuyar, F. Shi, R. Szabó, A. Samadi-Ghadim, Zs. Bognár, L. Fox-Machado, V. Khalack, M. Lares-Martiz, C. C. Lovekin, P. Mikołajczyk, D. Mkrtichian, J. Pascual-Granado, E. Paunzen, T. Richey-Yowell, Á. Sódor, J. Sikora, T. Z. Yang, E. Brunsden, A. David-Uraz, A. Derekas, A. García Hernández, J. A. Guzik, N. Hatamkhani, R. Handberg, T. S. Lambert, P. Lampens, S. J. Murphy, R. Monier, K. R. Pollard, P. Quitral-Manosalva, A. Ramón-Ballesta, B. Smalley, I. Stateva, R. Vanderspek, (2021), MNRAS, Volume 506, Issue 1, 1073–1110, *'TESS Cycle 1 observations of roAp stars with 2-min cadence data'* [ADS link]
- A. David-Uraz, M. E. Shultz, V. Petit, **D. M. Bowman**, C. Erba, R. A. Fine, C. Neiner, H. Pablo, J. Sikora, A. ud-Doula, G. A. Wade, (2021), MNRAS 504, Issue 4, 4841–4849, *'MOBSTER – IV. Detection of a new*

magnetic B-type star from follow-up spectropolarimetric observations of photometrically selected candidates' [ADS link]

- **D. M. Bowman**, J. Hermans, J. Daszyńska-Daszkiewicz, D. L. Holdsworth, A. Tkachenko, S. J. Murphy, B. Smalley, D. W. Kurtz, (2021), MNRAS 504, Issue 3, 4039–4053 *'KIC 5950759: a high-amplitude δ Sct star with amplitude and frequency modulation near the terminal age main sequence'* [ADS link]
- W. W. Weiss, K. Zwintz, R. Kuschnig, G. Handler, A. F. W. Moffat, D. Baade, **D. M. Bowman**, T. Granzer, T. Kallinger, O. F. Koudelka, C. Lovekin, C. Neiner, H. Pablo, A. Pigulski, A. Popowicz, T. Ramiaramanantsoa, S. Rucinski, K. Strassmeier, G. Wade, (2021), Universe 7, 199, *'Space Photometry with BRITE-Constellation'* [ADS link]
- M. Michielsen, C. Aerts, **D. M. Bowman**, (2021), A&A 650, A175, *'Probing the temperature gradient in the core boundary layer of stars with gravito-inertial modes: the case of KIC 7760680'* [ADS link]
- S. Gebruers, I. Straumit, A. Tkachenko, J. S. G. Mombarg, M. G. Pedersen, T. Van Reeth, G. Li, P. Lampens, A. Escorza, **D. M. Bowman**, P. De Cat, L. Vermeylen, Y. Frémat, J. Bodensteiner, H.-W. Rix, C. Aerts, (2021), A&A 650, A151, *'A homogeneous spectroscopic analysis of a Kepler legacy sample of dwarfs for gravity-mode asteroseismology'* [ADS link]
- T. Shenar, H. Sana, P. Marchant, B. Pablo, N. Richardson, A. F. J. Moffat, T. Van Reeth, R. H. Barbá, **D. M. Bowman**, P. Broos, P. A. Crowther, S. Clark, A. de Koter, S. E. de Mink, K. Dsilva, G. Gräfener, I. D. Howarth, N. Langer, L. Mahy, J. Máíz Apellániz, A. M. Pollock, F. R. N. Schneider, L. Townsley, J. S. Vink, (2021), A&A 650, A147, *'The Tarantula Massive Binary Monitoring V. R 144 – a wind-eclipsing binary with a total mass $\geq$ 140 $M_{\odot}$'* [ADS link]
- C. Johnston, N. Aimar, M. Abdul-Masih, **D. M. Bowman**, T. White, C. Hawcroft, H. Sana, S. Sekeran, K. Dsilva, A. Tkachenko, C. Aerts, (2021), MNRAS 503, Issue 1, 1124–1137, *'Characterization of the variability in the O+B eclipsing binary HD 165246'* [ADS link]
- J. Southworth, **D. M. Bowman**, K. Pavlovski, (2021), MNRAS Letters 501, Issue 1, L65-L70, *'A beta Cephei pulsator and a changing orbital inclination in the high-mass eclipsing binary system VV Orionis'* [ADS link]
- M. G. Pedersen, C. Aerts, P. I. Pápics, M. Michielsen, S. Gebruers, T. M. Rogers, G. Molenberghs, S. Burssens, S. Garcia, **D. M. Bowman**, (2021), Nature Astronomy, Volume 5, 715–722, *'Internal mixing of rotating stars inferred from dipole gravity modes'* [ADS link]
- T. Steindl, K. Zwintz, **D. M. Bowman**, (2021), A&A 645, A119, *'Tidally perturbed pulsations in the pre-main sequence δ Scuti binary RS Cha'* [ADS link]

2020: 2 first author and 10 co-author publications

- S. Sekaran, A. Tkachenko, M. Abdul-Masih, A. Prša, C. Johnston, D. Huber, S. J. Murphy, G. Banyard, A. W. Howard, H. Isaacson, **D. M. Bowman**, C. Aerts, (2020), A&A 643, A162, *'Tango of celestial dancers: A sample of detached eclipsing binary systems containing g-mode pulsating components. A case study of KIC9850387'* [ADS link]
- **D. M. Bowman**, (2020), Frontiers in Astronomy and Space Sciences 7, 70, *'Asteroseismology of high-mass stars: new insights of stellar interiors with space telescopes'* [ADS link]
- J. Southworth, **D. M. Bowman**, A. Tkachenko, K. Pavlovski, (2020), MNRAS Letters 497, Issue 1, L19–L23, *'Discovery of β Cep pulsations in the eclipsing binary V453 Cygni'* [ADS link]
- J. Bodensteiner, T. Shenar, L. Mahy, M. Fabry, P. Marchant, M. Abdul-Masih, G. Banyard, **D. M. Bowman**, K. Dsilva, A. J. Frost, C. Hawcroft, M. Reggiani, H. Sana, (2020), A&A 641, A43, *'Is HR 6819 a triple system containing a black hole? An alternative explanation'* [ADS link]
- L. Horst, P. V. F. Edelmann, R. Andrássy, F. K. Röpke, **D. M. Bowman**, C. Aerts, R. P. Ratnasingam, (2020), A&A 641, A18, *'Fully compressible simulations of waves and core convection in main-sequence stars'* [ADS link]

- **D. M. Bowman**, S. Burssens, S. Simón-Díaz, P. V. F. Edelmann, T. M. Rogers, L. Horst, F. K. Röpke, C. Aerts, (2020), A&A 640, A36, *'Photometric detection of internal gravity waves in upper main-sequence stars. II. Combined TESS photometry and high-resolution spectroscopy'* [ADS link]
- T. Shenar, J. Bodensteiner, M. Abdul-Masih, M. Fabry, L. Mahy, P. Marchant, G. Banyard, **D. M. Bowman**, K. Dsilva, C. Hawcroft, M. Reggiani, H. Sana, (2020), A&A Letters 639, L6, *'The "hidden" companion in LB-1 unveiled by spectral disentangling'* [ADS link]
- S. Burssens, S. Simón-Díaz, **D. M. Bowman**, G. Holgado, M. Michielsen, A. de Burgos, N. Castro, R. H. Barbá, C. Aerts, (2020), A&A 639, A81, *'Variability of OB stars from TESS southern Sectors 1-13 and high-resolution IACOB and OWN spectroscopy'* [ADS link]
- J. Van Beeck, V. Prat, T. Van Reeth, S. Mathis, **D. M. Bowman**, C. Aerts, (2020), A&A 638, A149, *'Detecting axisymmetric magnetic fields using gravity modes in intermediate-mass stars'* [ADS link]
- A. Tkachenko, K. Pavlovski, C. Johnston, C. Aerts, M. G. Pedersen, M. Michielsen, **D. M. Bowman**, J. Southworth, V. Tsymbal, (2020), A&A 637, A60, *'The mass discrepancy in intermediate- and high-mass eclipsing binaries: The need for higher convective core masses'* [ADS link]
- M. Abdul-Masih, G. Banyard, J. Bodensteiner, E. Bordier, **D. M. Bowman**, K. Dsilva, M. Fabry, C. Hawcroft, L. Mahy, P. Marchant, G. Raskin, M. Reggiani, T. Shenar, A. Tkachenko, H. Van Winckel, L. Vermeylen, H. Sana, (2020), Nature, Volume 580, Issue 7805, E11–E15, *'On the signature of a 70-solar-mass black hole in LB-1'* [ADS link]
- V. Prat, S. Mathis, C. Neiner, J. Van Beeck, **D. M. Bowman**, C. Aerts, (2020), A&A 636, A100, *'Period spacings of gravity modes in rapidly rotating magnetic stars. II. The case of an oblique dipolar fossil magnetic field'* [ADS link]

2019: 4 first author and 14 co-author publications

- V. Antoci, M. Cunha, **D. M. Bowman**, S. J. Murphy, D. W. Kurtz, T. R. Bedding, C. Borre, S. Christophe, J. Daszyńska-Daszkiewicz, L. Fox-Machado, A. García Hernández, H. Ghasemi, R. Handberg, H. Hansen, A. Hasanzadeh, G. Houdek, C. Johnston, A. B. Justesen, F. Kahraman Alicavus, F. Kotysz, D. Latham, J. Matthews, J. Mønster, E. Niemczura, E. Paunzen, J. P. Sanchez Arias, A. Pigulski, J. Pepper, T. Richey-Yowell, H. Safari, S. Seager, B. Smalley, T. Shutt, A. Sódor, J.-C. Suárez, A. Tkachenko, T. Wu, K. Zwintz, S. Barceló Forteza, E. Brunsden, Z. Bognár, D. Buzasi, S. Chowdhury, P. De Cat, J. Evans, Z. Guo, J. A. Guzik, N. Jevtic, P. Lampens, M. Lares Martiz, C. Lovekin, G. Li, G. M. Mirouh, D. Mkrtichian, M. J. P. F. G. Monteiro, J. Nemec, R. Ouazzani, J. Pascual-Granado, D. Reese, M. Rieutord, J. R. Rodon, M. Skarka, P. Sowicka, I. Stateva, R. Szabó, W. W. Weiss, (2019), MNRAS 490, Issue 3, 4040–4059, *'The first view of δ Sct and γ Dor stars with the TESS mission'* [ADS link]
- V. Khalack, C. Lovekin, **D. M. Bowman**, O. Kobzar, A. David-Uraz, E. Paunzen, J. Sikora, P. Lenz, O. Kochukhov, D. L. Holdsworth, G. A. Wade, (2019), MNRAS 490, Issue 2, 2102–2111, *'Rotational and pulsational variability in the TESS light curve of HD 27463'* [ADS link]
- S. Burssens, **D. M. Bowman**, C. Aerts, M. G. Pedersen, E. Moravveji, B. Buysschaert, (2019), MNRAS 489, Issue 1, 1304–1320, *'New β Cep pulsators discovered with K2 space photometry'* [ADS link]
- B. J. S. Pope, G. R. Davies, K. Hawkins, T. R. White, A. Stokholm, A. Bieryla, D. W. Latham, M. Lucey, C. Aerts, S. Aigrain, V. Antoci, T. R. Bedding, **D. M. Bowman**, A. Chontos, G. A. Esquerdo, D. Huber, P. Jofré, S. J. Murphy, T. Van Reeth, V. Silva Aguirre, J. Yu, (2019), ApJS 244, Issue 1, 18, *'The Kepler Smear Campaign: Light curves for 102 Very Bright Stars'* [ADS link]
- **D. M. Bowman**, C. Johnston, A. Tkachenko, D. Mkrtichian, K. Gunsriwiwat, C. Aerts, (2019), ApJL 883, Issue 1, L26, *'Discovery of tidally-perturbed pulsations in the eclipsing binary system U Gru: a crucial system for tidal asteroseismology'* [ADS link]
- **D. M. Bowman** and D. L. Holdsworth, (2019), A&A 629, A21, *'Adaptive elliptical aperture photometry: a software package for high-cadence ground-based photometry. I. Application to rapid oscillators observed from SAAO'* [ADS link]

- J. Sikora, A. David-Uraz, S. Chowdhury, **D. M. Bowman**, G. A. Wade, V. Khalack, O. Kobzar, O. Kochukhov, C. Neiner, E. Paunzen, (2019), MNRAS 487, Issue 4, 4695–4710, *'MOBSTER – II. Identification of rotationally variable A stars observed with TESS in sectors 1–4'* [ADS link]
- M. S. Cunha, V. Antoci, D. L. Holdsworth, D. W. Kurtz, L. A. Balona, Zs. Bognár, **D. M. Bowman**, Z. Guo, P. P. A. Kolaczek-Szymański, M. Lares-Martiz, E. Paunzen, M. Skarka, B. Smalley, Á. Sódor, O. Kochukhov, T. R. Bedding, D. L. Buzasi, L. Fox-Machado, A. Hasanzadeh, E. Niemczura, P. Quitral-Manosalva, I. Stateva, P. De Cat, A. García Hernández, H. Ghasemi, G. Handler, J. M. Matthews, M. J. P. F. G. Monteiro, J. M. Nemec, J. Pascual-Granado, H. Safari, J. C. Suárez, R. Szabó, A. Tkachenko, W. W. Weiss, (2019), MNRAS 487, Issue 3, 3523–3549, *'Rotation and pulsation in Ap stars: first light results from TESS sectors 1 and 2'* [ADS link]
- R. Manick, D. Kamath, H. Van Winkel, A. Jorissen, S. Sekaran, **D. M. Bowman**, G.-M. Oomen, J. Kluska, D. Bollen, C. Waelkens, (2019), A&A 628, A40, *'Spectroscopic binaries RV Tauri and DF Cygni'* [ADS link]
- A. David-Uraz, C. Neiner, J. Sikora, **D. M. Bowman**, V. Petit, S. Chowdhury, G. Handler, M. Pergeorelis, M. Cantiello, C. Erba, Z. Keszthelyi, V. Khalack, O. Kobzar, O. Kochukhov, J. Labadie-Bartz, R. MacInnis, S. P. Owocki, H. Pablo, M. E. Shultz, A. ud-Doula, G. A. Wade, and the MOBSTER Collaboration, (2019), MNRAS 487, Issue 1, 304–317, *'Magnetic OB[A] stars with TESS: probing their evolutionary and rotational properties (MOBSTER) - I. First-light observations of known magnetic B and A stars'* [ADS link]
- V. Prat, S. Mathis, B. Buysschaert, J. Van Beeck, **D. M. Bowman**, C. Aerts, C. Neiner, (2019), A&A 627, A64, *'Period spacings of gravity modes in rapidly rotating magnetic stars. I. Axisymmetric fossil field with poloidal and toroidal components'* [ADS link]
- **D. M. Bowman**, S. Burssens, M. G. Pedersen, C. Johnston, C. Aerts, B. Buysschaert, M. Michielsen, A. Tkachenko, T. M. Rogers, P. V. F. Edelmann, R. P. Ratnasingam, S. Simón-Díaz, N. Casto, E. Moravveji, B. J. S. Pope, T. R. White, P. De Cat, (2019), Nature Astronomy, Volume 3, Number 8, 760–765, *'Low-frequency gravity waves in blue supergiants revealed by high-precision space photometry'* [ADS link]
- J. S. G. Mombarg, T. Van Reeth, M. G. Pedersen, G. Molenberghs, **D. M. Bowman**, C. Johnston, A. Tkachenko, C. Aerts, (2019), MNRAS 485, Issue 3, 3248–3263, *'Asteroseismic masses, ages and core properties of γ Doradus stars using the asymptotic period spacing and spectroscopy'* [ADS link]
- P. V. F. Edelmann, R. P. Ratnasingam, M. G. Pedersen, **D. M. Bowman**, V. Prat, T. M. Rogers, (2019), ApJ 876, Issue 1, 4–24, *'Three-dimensional simulations of massive stars I. wave generation and propagation'* [ADS link]
- G. Handler, A. Pigulski, J. Daszyńska-Daszkiewicz, A. Irrgang, D. Kilkenny, Z. Guo, N. Przybilla, F. Kahraman Aliçavuş, T. Kallinger, J. Pascual-Granado, E. Niemczura, T. Różański, S. Chowdhury, D. L. Buzasi, G. M. Mirouh, **D. M. Bowman**, C. Johnston, M. G. Pedersen, S. Simón-Díaz, E. Moravveji, K. Gazeas, P. De Cat, R. K. Vanderspek, G. R. Ricker, (2019), ApJL 873, Issue 1, L4, *'Asteroseismology of massive stars with the TESS mission: the runaway β Cep pulsator PHL 346 = HN Aqr'* [ADS link]
- M. G. Pedersen, S. Chowdhury, C. Johnston, **D. M. Bowman**, C. Aerts, G. Handler, P. De Cat, C. Neiner, A. David-Uraz, D. Buzasi, A. Tkachenko, S. Simón-Díaz, E. Moravveji, J. Sikora, G. Mirouh, C. C. Lovekin, M. Cantiello, J. Daszyńska-Daszkiewicz, A. Pigulski, (2019), ApJL 872, Issue 1, L9, *'Diverse variability of O and B stars revealed from 2-minute light curves in sectors 1 and 2 of the TESS mission: selection of an asteroseismic sample'* [ADS link]
- C. Johnston, A. Tkachenko, C. Aerts, G. Molenberghs, **D. M. Bowman**, M. G. Pedersen, B. Buysschaert, P. I. Pápics, (2019), MNRAS 482, Issue 1, 1231–1246, *'Binary Asteroseismic Modelling: isochrone-cloud methodology and application to Kepler gravity mode pulsators'* [ADS link]
- **D. M. Bowman**, C. Aerts, C. Johnston, M. G. Pedersen, T. M. Rogers, P. V. F. Edelmann, S. Simón-Díaz, T. Van Reeth, B. Buysschaert, A. Tkachenko, S. A. Triana, (2019), A&A 621, A135, *'Photometric detection of internal gravity waves in upper main-sequence stars. I. Methodology and application to CoRoT targets'* [ADS link]

2018: 2 first author and 8 co-author publications

- D. L. Holdsworth, M. S. Cunha, H. Shibahashi, D. W. Kurtz, **D. M. Bowman**, (2018), MNRAS 480, Issue 3, 2976–2984, *'K2 observations of the rapidly oscillating Ap star 33 Lib (HD 137949): new frequencies and unique non-linear interactions'* [ADS link]
- D. L. Holdsworth, H. Saio, R. R. Sefako, **D. M. Bowman**, (2018), MNRAS 480, Issue 2, 2405–2410, *'LCO observations of a super-critical distorted pulsation in the roAp star J0855 (TYC 2488-1241-1)'* [ADS link]
- T. Van Reeth, J. S. G. Mombarg, S. Mathis, A. Tkachenko, J. Fuller, **D. M. Bowman**, B. Buysschaert, C. Johnston, A. García Hernández, J. Goldstein, R. H. D. Townsend, C. Aerts, (2018), A&A 618, A24, *'Sensitivity of gravito-inertial modes to differential rotation in intermediate-mass main-sequence stars'* [ADS link]
- B. Buysschaert, C. Neiner, A. J. Martin, C. Aerts, **D. M. Bowman**, M. E. Oksala, T. Van Reeth, (2018), MNRAS 478, Issue 2, 2777–2793, *'Detection of magnetic fields in chemically peculiar stars observed with the K2 space mission'* [ADS link]
- B. Buysschaert, C. Aerts, **D. M. Bowman**, C. Johnston, T. Van Reeth, M. G. Pedersen, C. Neiner, (2018), A&A 616, A77, *'Forward seismic modeling of the pulsating magnetic B-type star HD 43317'* [ADS link]
- **D. M. Bowman**, B. Buysschaert, C. Neiner, P. I. Pápics, M. E. Oksala, C. Aerts, (2018), A&A 616, A77, *'K2 space photometry reveals rotational modulation and stellar pulsations in chemically peculiar A and B stars'* [ADS link]
- C. Aerts, G. Molenberghs, M. Michielsen, M. G. Pedersen, R. Björklund, C. Johnston, J. S. G. Mombarg, **D. M. Bowman**, B. Buysschaert, P. I. Pápics, S. Sekaran, J. O. Sundqvist, A. Tkachenko, K. Truyaert, T. Van Reeth, E. Vermeyen, (2018), ApJS 237, 15–46, *'Forward asteroseismic modeling of stars with a convective core from gravity-mode oscillations: parameter estimation and stellar model selection'* [ADS link]
- **D. M. Bowman** and D. W. Kurtz, (2018), MNRAS 476, Issue 3, 3169–3184, *'Characterizing the observational properties of δ Sct stars in the era of space photometry from the Kepler mission'* [ADS link]
- C. Aerts, **D. M. Bowman**, S. Simón-Díaz, B. Buysschaert, C. Johnston, E. Moravveji, P. G. Beck, P. De Cat, S. Triana, S. Aigrain, N. Castro, D. Huber, T. White, (2018), MNRAS 476, Issue 1, 1234–1241, *'K2 photometry and HERMES spectroscopy of the blue supergiant ρ Leo: rotational wind modulation and low-frequency waves'* [ADS link]
- D. L. Holdsworth, H. Saio, **D. M. Bowman**, D. W. Kurtz, R. R. Sefako, M. Joyce, T. Lambert, B. Smalley, (2018), MNRAS 476, Issue 1, 601–616, *'Suppressed phase variations in a high amplitude rapidly oscillating Ap star pulsating in a distorted quadrupole mode'* [ADS link]

2016: 1 first author and 1 co-author publications

- **D. M. Bowman**, D. W. Kurtz, M. Breger, S. J. Murphy, D. L. Holdsworth, (2016), MNRAS 460, Issue 2, 1970–1989, *'Amplitude modulation in δ Sct stars: statistics from an ensemble study of Kepler targets'* [ADS link]
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2015: 1 first author and 2 co-author publications

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