

Zdenek Prudil

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- PROFESIONAL EXPERIENCE** **Ph.D. student**, Astronomisches Rechen-Institut, since September, 2016
Supervisors:, E. K. Grebel, I. Dékány, R. Smolec
Since April 2017 Hector fellow Ph.D. student
- EDUCATION** **Astronomisches Rechen-Institut, Heidelberg University**, Heidelberg
Ph.D., Theoretical Physics and Astrophysics, Expected February 2020
Thesis: RR Lyrae stars as tracers of substructure and Galactic archaeology
Faculty of Science, Masaryk University, Brno
MSc., Theoretical Physics and Astrophysics, June 2016
Thesis: Blazhko Effect in Galactic Bulge RR Lyrae Stars
Faculty of Science, Masaryk University, Brno
BSc., Astrophysics, June 2014
Thesis: Analysis of Light Curve of RR Lyrae Type Star
- FELLOWSHIPS PRIZES** **Hector fellowship: Hector fellow academy** April 2017 - April 2020
Benefits: 3 years of full Ph.D. funding, including a reasearch fund of 45 000 €
The International Max Planck Reserach School for Astronomy and Cosmic Physics: Fellow of the IMPRS-HD, September 2016 - February 2020
Masaryk University: Deans' award for the best Master thesis June 2017
Thesis: Blazhko Effect in Galactic Bulge RR Lyrae Stars, price 800 €
- RESEARCH INTEREST**
- Galactic archeology in the Milky Way and Magellanic Clouds
 - The Milky Way structure and dynamics
 - Radial stellar pulsations in RR Lyrae stars
 - Data analysis and machine learning
- TECHNICAL SKILLS** **Languages**: Python (numpy, scipy, scikit-learn), SQL, L^AT_EX, basics of Fortran and C
Software: galpy, iSpec, Period04
Observing experince:
 - Masaryk University Observatory and Observatory and Planetarium Brno - 0.35 m telescope, Brno, Czech Republic (9 nights)
 - Akdeniz University observatory - 0.25 m telescope, Antalya, Turkey (4 nights)
- PUBLICATIONS Peer-reviewed** **Prudil, Z.**, I. Dékány, E. K. Grebel, M. Catelan, M. Skarka, R. Smolec: On the Oosterhoff dichotomy in the Galactic bulge: II. kinematical distribution, 2019, *MNRAS*, 484, 4833
Prudil, Z., M. Skarka, J. Liška, E. K. Grebel, C.-U. Lee: Candidates for RR Lyrae in binary systems from the OGLE Galactic bulge survey, 2019, *MNRAS*, 484, 4833
Prudil, Z., Dékány, I., Catelan M., Smolec, R., Grebel, E. K., Skarka M.: On the Oosterhoff dichotomy in the Galactic bulge: I. Spatial distribution, 2019, *MNRAS*, 484, 4833

Prudil, Z., Grebel, E. K., Dékány, I. Smolec, R.: Photometric study of the SMCNOD using variable stars from the OGLE-IV survey, 2018, *MNRAS*, **480**, 669

Prudil, Z., Skarka, M.: Blazhko effect in the Galactic bulge fundamental mode RR Lyrae stars I: Incidence rate and differences between modulated and non-modulated stars, 2017, *MNRAS*, **466**, 2602

Prudil, Z., Smolec, R., Skarka, M., Netzel, H.: Peculiar double-periodic pulsation in RR Lyrae stars of the OGLE collection - II. Short-period stars with a dominant radial fundamental mode, 2017, *MNRAS*, **465**, 4074

Smolec, R., **Prudil, Z.**, Skarka, M., Bakowska, K.: Peculiar double-periodic pulsation in RR Lyrae stars of the OGLE collection - I. Long-period stars with dominant radial fundamental mode, 2016, *MNRAS*, **461**, 2934

Skarka, M., Liška, J. Auer, R. F., **Prudil, Z.**, Juráňová, A. Sódor, Á.: The SERMON project: 48 new field Blazhko stars and an investigation of modulation-period distribution, 2016, *A&A*, **592**, A144

Conference Proceedings

Skarka, M., **Prudil, Z.**: Photometric Differences Between Modulated and Non-Blazhko ab-type RR Lyrae Stars in the Galactic Bulge, 2018, in The RR Lyrae 2017 Conference. Revival of the Classical Pulsators: from Galactic Structure to Stellar Interior Diagnostics, ed. R. Smolec, K. Kinemuchi, & R. I. Anderson, *Vol. 6*, 319-320

Prudil, Z., Grebel, E. K., Dékány, I. Smolec, R., Skarka, M.: The Oosterhoff Dichotomy in the Galactic Bulge, 2018, in The RR Lyrae 2017 Conference. Revival of the Classical Pulsators: from Galactic Structure to Stellar Interior Diagnostics, ed. R. Smolec, K. Kinemuchi, & R. I. Anderson, *Vol. 6*, 37-41

Smolec, R. **et al.**: Petersen diagram revolution, 2017, in Wide-Field Variability Surveys: A 21st Century Perspective - 22nd Los Alamos Stellar Pulsation - Conference Series Meeting, San Pedro de Atacama, Chile, Edited by Catelan, M.; Gieren, W.; *EPJ Web of Conferences*, *Volume 152*, id.06003

Prudil, Z.: Multiple variability in RR Lyrae stars, 2017, in proceedings of the 48th conference on Variable Stars Research, *Open European Journal on Variable Stars*, **180**, 47

Prudil, Z., Skarka, M., Zejda, M.: Analysis of light curve of LP Camelopardalis, 2016, *Communications of the Konkoly Observatory Hungary*, **105**, 213

ACADEMIC MEETINGS

LOC at MOSAIC 2019 Science and Surveys with the ELT Multi-Object Spectrograph, Heidelberg **March 2019**

IMPRS Summer school: Gaia Data & Science, Heidelberg **September 2018**

Near-Field Cosmology with the Dark Energy survey's DR1 and beyond, Chicago **June 2018**

RRL2017 Revival of the classical pulsators: from galactic structure to stellar interior diagnostics, Niepolomice **September 2017**
Talk: The Oosterhoff Dichotomy in the Galactic Bulge

The 48th Conference on Variable Stars Research, Prague **November 2016**
Talk: Multiple variability in RR Lyrae stars

Gaia Data Workshop, Heidelberg **November 2016**

Meeting of Young CAMK, Centrum Astronomiczne im. Mikołaja Kopernika, Warsaw
February 2016

Talk: Blazhko effect in Galactic bulge RR Lyrae stars

RRL2015 High-Precision Studies of RR Lyrae Stars, Visegrád **October 2015**

Poster: Analysis of light curve of LP Camelopardalis

Visiting researcher:

- Faculty of Science, Masaryk University, Brno **October 2018**
- Astronomical Center. Copernicus Academy of Sciences, Warsaw **February 2016, March 2018**

**TEACHING &
EXPERIENCE**

Teaching experience:

- GALACTIC AND EXTRAGALACTIC ASTRONOMY at Heidelberg University
Teaching assistant in Summer semester 2017, 2018 (graduate students)
- ASTRO-LAB at Heidelberg University (block course)
Teaching assistant in Winter semester 2017 (undergraduate and graduate students)

Public outreach:

- VYSKOV OBSERVATORY at Vyskov **Summer 2013, 2014**
Astronomer - public observations of the night sky and Sun using the telescopes
- BRNO OBSERVATORY AND PLANETARIUM at Brno **FY 2015**
Night Sky Guide - public observations of the night sky using the telescopes

MBA courses: Two courses as a part of the Hector fellow academy, focused on the soft skills and project management: PROJECTS, PEOPLE at the Karlsruhe Institute of Technology **2018 – 2019**