Angela Kochoska

Personal Data

Place and Date of Birth:	Bitola, Macedonia | 12 April 1990
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Work Experience

Research

My main research topics are modeling and analysis of eclipsing binary stars, with a particular interest in automated methods of detectability and classification with machine learning methods and advanced modeling with Bayesian inference.

Aug 2020 - now	Postdoctoral Researcher (Department of Astrophysics and Planetary Science, Villanova University)
Aug 2020 - now	Adjunct Professor (Department of Astrophysics and Planetary Science, Villanova University)
Apr 2020 - now	Member of the TESS Eclipsing Binary Working Group Data validation, classification and analysis
Jan 2017 - Aug 2020	MSE Postdoctoral Teaching Fellow (Department of Astrophysics and Planetary Science, Villanova University) MSE courses instructor and researcher in the field of binary stars
Jan 2017 - Dec 2018	Young Scientist at ISSI International Team 377 "Understanding the Fate of Binary Systems in the Gaia Era". Developing a pipeline for classification and analysis of Gaia eclipsing binaries
Sep 2015 - now	Member of Gaia Coordination Unit 7 Leading a study of detectability and classification of eclipsing binaries in Gaia with the t-SNE and DBSCAN methods
Oct 2015 - now	Member of the Kepler Eclipsing Binary Working Group Classification and visualization with t-SNE and DBSCAN
Oct 2014 - now	Member of the development team of PHOEBE (PHysics Of Eclipsing BinariEs) Main focus on modeling contact binaries and radiative transfer in contact binary envelopes

Teaching

2018 - 2021	Astronomy Lab: Stars and Astronomy Lab: Planets Villanova University, Department of Astrophysics and Planetary Science
Fall 2017	Life in the Universe Villanova University, Department of Astrophysics and Planetary Science
Spring 2017	How Old is the Universe Villanova University, Department of Astrophysics and Planetary Science
Spring 2016	Astronomical Observations; Physics Lab II University of Ljubljana, Faculty of Mathematics and Physics
Fall 2015	Astronomy 1 University of Ljubljana, Faculty of Mathematics and Physics
Spring 2015	Astronomical Observations; Our and Other Solar Systems University of Ljubljana, Faculty of Mathematics and Physics

Education

2014 - 2017	Third cycle (PhD) degree in Physics, program Astrophysics, **University of Ljubljana, Faculty of Mathematics and Physics**, Thesis title: *Discovery and modeling of contact binaries in photometric and spectroscopic sky surveys* | Advisor: Tomaz Zwitter
Spring 2014	Exchange Semester at **University of Trieste, Department of Physics** Gpa: 29.25/30.0
2011 - 2014	Second cycle (Master's) degree in Physics, program Astrophysics, **University of Ljubljana, Faculty of Mathematics and Physics**, Thesis title: *The OC-D Model of Binary Stars* | Advisor: Tomaz Zwitter Gpa: 9.55/10.0
2008 - 2011	First cycle (Bachelor's) degree in Physics, program Astronomy **University of Ljubljana, Faculty of Mathematics and Physics**, Gpa: 8.69/10.0

Conferences and meetings

Meeting of the American Astronomical Society 237
iPoster+ presentation — 11 - 15 Jan. 2020

Meeting of the American Astronomical Society 235
Honolulu, HI
poster presentation — 4 - 8 Jan. 2020

International conference "Universe of Binaries, Binaries in the Universe
Telč, Czech Republic
contributed talk — 7 - 11 Sep. 2019

Meeting of the American Astronomical Society 233
Seattle, WA
poster presentation — 6 - 10 Jan. 2019

Meeting of the American Astronomical Society 231
Washington, DC
poster presentation — 8 - 12 Jan. 2018

First ISSI International Team 377 Meeting
Bern, Switzerland — 16 - 20 Jan. 2017

Binary Stars in Cambridge 2016
University of Cambridge, UK — 24 - 30 Jul. 2016

Gaia-ESO Survey Third Science Meeting
Vilnius, Lithuania
poster presentation — 1 - 4 Dec. 2015

PHOEBE Power Meeting
Villanova, Pennsylvania, USA — 9 - 10 Nov. 2015

STFC Summer School *Atomic processes and spectral modelling in astrophysics*
Belfast, UK — 31 Aug. - 4 Sep. 2015

State of the art analysis tools for binary stars and pulsators in binary systems workshop
Leuven, Belgium — 13 - 17 Apr. 2015

Awareness conference *Hot topics in Astrophysics*
Bucharest, Romania — 24 - 28 Sep. 2013

Winter school *Very high time and space resolution astrophysics*
Asiago, Italy — 27 Feb. - 7 Mar. 2013

Computer skills

Programming tools:	Python, SQL, Reactjs, C/C++/C, HTML/CSS/JavaScript, LaTeX, MATLAB
Operating systems:	OS X, Linux (Ubuntu, Red Hat) and Windows (XP/2000/Vista/7/8).

Language skills

Macedonian:	Mothertongue
English:	Advanced User
Slovenian:	Advanced User
Italian:	Intermediate User
French:	Basic User

Selected Publications

1. **Kochoska**, Conroy, Hambleton, et al. (2020), *Beyond DC and MCMC: alternative algorithms and approaches to fitting light curves*, Contributions of the Astronomical Observatory Skalnate Pleso, vol. 50, no. 2, p. 539-545.

2. Conroy, **Kochoska**, Hey, et al. (2020), *Physics of Eclipsing Binaries. V. General Framework for Solving the Inverse Problem*, The Astrophysical Journal Supplement Series, Volume 250, Issue 2, id.34, 17 pp.

3. **Kochoska**, Conroy, Hambleton, et al. (2020), *Fitting in the wild: exploration of new approaches and methods for estimating binary system parameters from light curve data*, American Astronomical Society meeting 235, id. 114.03. Bulletin of the American Astronomical Society, Vol. 52, No. 1.

4. Prša, Conroy, Horvat, Pablo, **Kochoska**, et al. (2016),*Physics Of Eclipsing Binaries. II. Toward the Increased Model Fidelity*, ApJS 227 29.

5. Kirk, Conroy, Prša, Abdul-Masih, **Kochoska**, et al. (2016), *Kepler Eclipsing Binary Stars. VII. The Catalog of Eclipsing Binaries Found in the Entire Kepler Data Set*, The Astronomical Journal, Volume 151, Issue 3, article id. 68, 21 pp.

6. **Kochoska**, Mowlavi, Prša, et al. (2017), *Gaia eclipsing binary and multiple systems. A study of detectability and classification of eclipsing binaries with Gaia*, Astronomy Astrophysics, Volume 602, id.A110, 9 pp.

7. **Kochoska**, Prša, Zwitter, et al. (2018), *COBAIN: generalized 3D radiative transfer code for contact binary atmospheres*, arXiv:1804.08781.

8. Mowlavi, Lecoeur-Taibi, Holl, ..., **Kochoska**, et al. (2017), *Gaia eclipsing binary and multiple systems. Two-Gaussian models applied to OGLE-III eclipsing binary light curves in the Large Magellanic Cloud*, Astronomy Astrophysics, Volume 606, id.A92, 21 pp.