Nina-Elisabeth Nèmec

Curriculum Vitae

Justus-von-Liebig-Weg 3
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Website

Research Interests

Solar and stellar variability

Solar and stellar magnetic fields

Solar and stellar activity

Sun-Earth interactions

Planetary habitability and exoplanets

Education

Since 2017 **PhD student** at the International Max Planck Research School (IMPRS) at the Max Planck Institute for Solar System Research (MPS) and the University of Göttingen

Project Description

Title Exploring the solar paradigm to explain stellar variability

Supervisor Dr. Alexander Shapiro, Research Scientist and Group Leader "Connecting solar and stellar variabilities (SOLVe)", MPS

Supervisor Dr. Natalie Krivova, Research Scientist, MPS

Supervisor Prof. Dr. Stefan Dreizler, University of Göttingen

Abstract The unprecedented precision of broadband stellar photometry achieved with the CNES CoRoT and NASA Kepler satellites has inaugurated a new era in studying stellar photometric variabilities. Several recent investigations utilised Kepler data to establish the dependence of stellar photometric variability on the rotational period for stars with near-solar effective temperatures. While the photometric variability strongly decreases with the period for slow rotators (P_{rot} >about 10 days), it is almost independent of the period for fast rotators (P_{rot} <about 10 days). To date, such a dependence has not been explained. The goal of this work is to find out, through comparison of observational and simulated data, which (if any) physical concepts of solar brightness variability must be altered in order to reproduce the distribution of Sun-like stars' variabilities.

2015-2017 **MSc in Astronomy** at the University of Vienna

Thesis Title The XUV Sun in Time

Supervisor Prof. Dr. Manuel Güdel

Winter **KU Leuven - Erasmus + study**

2016/17 Stay was used to extend knowledge in stellar and plasma physics and stellar evolution

2012-2015	**BSc in Astronomy** at the University of Vienna
Thesis Title	The solar wind in time
Supervisor	Prof. Dr. Manuel Güdel
Supervisor	Dr. Colin P. Johnstone
Supervisor	Dr. Theresa Lüftinger

Research Experience

2017-present	**PhD student in SOLVe Group at MPS**
Lead	Dr. Alexander Shapiro
2014-2017	**Research Assistant FWF Project "Pathways to Habitability" at the University of Vienna**
Lead	Prof. Dr. Manuel Güdel
2014-2017	**Research Assistant Star and Planet Formation Group at the University of Vienna**
Lead	Prof. Dr. Manuel Güdel

Workshop and Conference Contributions

Talk	*Solar brightness variations as they would be observed by the Kepler telescope*, N.-E. Nemec, A.I. Shapiro, N. A. Krivova, R. H. Cameron, S. K. Solanki, S. Dreizler, Observing the Sun as a star, Göttingen, Germany, 2018
Talk	*Solar brightness variations as they would be observed by the Kepler telescope*, N.-E. Nemec, A.I. Shapiro, N. A. Krivova, R. H. Cameron, S. K. Solanki, S. Dreizler, XXXth General Assembly of the International Astronomical Union, Vienna, Austria, 2018
Poster	*The XUV Sun in Time*,N.-E. Nemec, M. Güdel, T. Lüftinger, C.P. Johnstone, XXXth General Assembly of the International Astronomical Union, Vienna, Austria, 2018
Talk	*Solar brightness variations as they would be observed by the Kepler telescope*, N.-E. Nemec, A.I. Shapiro, N. A. Krivova, R. H. Cameron, S. K. Solanki, S. Dreizler, Sun-Climate Symposium, Lake Arrowhead/California, USA, 2018
Talk	*The XUV Sun in Time*, N.-E. Nemec, M. Güdel, T. Lüftinger, C.P. Johnstone, General Assembly of the German Astronomical Union, Göttingen, Germany, 2017
Poster	*The XUV Sun in Time*, N.-E. Nemec, M. Güdel, T. Lüftinger, C.P. Johnstone, Rocks and Stars, Göttingen, Germany, 2017
Poster	*The solar wind in time*, N.-E. Nemec, M. Güdel, T. Lüftinger, C.P. Johnstone, The Astrophyiscs of Habitability, Vienna, Austria, 2016
Member LOC	*Conference "The Astrophysics of Habitability"*, Vienna, Austria, 2016
Talk	*The HRD*, Workshop "Plasma", Traunkirchen, Austria, 2014
Talk	*Coronal Mass Ejections*, Workshop "Plasma", Traunkirchen, Austria, 2014

Publications

N.-E. Nemec, A.I. Shapiro, N.A.Krivova, R.V. Tagirov, R. H. Cameron, S. K. Solanki and S. Dreizler, in prep.

N.-E. Nemec, M. Guedel, T. Lueftinger, C.P. Johnstone, in prep.

Honours and Awards

2017 Performance Scholarship, University of Vienna

2016 Erasmus+ Scholarship for KU Leuven, Belgium

2016 Performance Scholarship, University of Vienna

2015 Performance Scholarship, University of Vienna

2015 Scholarship Alpbach Summer School 2015

Representation and Public Outreach

March 2019 Talk for 10 - 15 year old high school students in the framework of the Zukunftstag at MPS, Goettinge, Germany

January 2019 Night of Science, Goettingen, Germany

2018- Member of Max Planck PhDnet working group on Open Science and Good Scientific Practice

2018- Member of Max Planck PhDnet working group to organise the General Meeting of the PhDnet in 2019

Since July 2018 Member of the Executive Committee of IMPRS at MPS

Since July 2018 PhD Student Representative of IMPRS at MPS

May 2016 "Lange Nacht der Forschung", Vienna, Austria

2015-2017 Chief Faculty Student Representative, University of Vienna

2015-2017 Student Representative for Astronomy, University of Vienna

Teaching

Summer 2019 TA 'Experimental Physics IV' at University of Göttingen

Summer 2019 TA 'Analytical Mechanics' at University of Göttingen

2018 Supervision of two high school students during their 2 week internship at MPS

Winter 2018 TA 'Calculation methods' at University of Göttingen

Summer 2017 TA 'Lab: Introduction to astronomical methods' at University of Vienna

Summer 2016 TA 'Lab: Introduction to astronomical methods' at University of Vienna

Winter 2015 TA 'Mathematical Methods I' at University of Vienna

Winter 2014 TA 'Introduction to Astronomy' at University of Vienna

Languages

German	Native speaker	
English	Fluent	*on a conversational and scientific level*

Computer Skills

Programming	Python	*advanced*
	IDL, Fortran	*basics*
OS	Windows, Mac, Linux/Ubuntu	
Word Processing	LaTeX, Open Office, Office	

References

Dr. Alexander Shapiro
Max Planck Institute for Solar System Research
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Dr. Natalie Krivova
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Prof. Dr. Manuel Güdel
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Dr. Theresa Lüftinger
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