Natalia Ewelina Lewandowska - Curriculum Vitae

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Research Gate LinkedIn

Core Professional Strengths

- Correlation searches and simulations of multiwavelength pulsar data
- High time resolution polarimetry studies of radio pulsar data
- Physics & Astronomy teaching
- Undergraduate, graduate mentoring & training
- Hands-on learning
- Collaboration building & diversity initiatives
- Public outreach management

Current Position

Visiting Assistant Professor of Physics - Swarthmore College
Adjunct Professor of Physics and Astronomy - West Virginia University

Education

2010/09 - 2015/12	**PhD, Physics** at the Astronomy Department/University of Würzburg (*A Correlation Study of Radio Giant Pulses and Very High Energy Photons from the Crab pulsar*; Advisors: K. Mannheim, D. Elsässer)
2009/01 - 2010/04	**Diploma, Physics** at Hamburg Observatory/University of Hamburg (*Examination of Flare Stars with the highspeed photo-polarimeter OPTIMA*; Advisors: C. Liefke, J. Schmitt, G. Kanbach)
2007/10 - 2008/10	**Student Research Project** at Hamburg Observatory/University of Hamburg (*The morphological Characteristics of Comet 17/P Holmes*; Advisors: C. Liefke, J. Schmitt)
2006/04 - 2008/11	**Undergraduate Student** at University of Hamburg/Germany (Major: Physics, Minor: Astronomy)
2004/08 - 2006/03	**Undergraduate Student** at Friedrich Schiller University Jena, Thuringia/Germany

Extended Education

2014/04 - 2014/07	Attendance of course **"Radio Interferometry: Methods and Science"** with hands-on tutorials in AIPS & CASA at University of Bonn & Argelander Institute for Astronomy

Work Experience

2021/07 - 2023/06	**Visiting Assistant Professor of Physics** at Swarthmore College, Swarthmore, Pennsylvania/USA
2020/07 - 2021/06	**Visiting Assistant Professor of Physics and Astronomy** at Haverford College, Haverford, Pennsylvania/USA
2018/04 - 2020/06	**Postdoctoral Fellow** at West Virginia University Research Corporation (WVURC), Morgantown, West Virginia/USA
2016/04 - 2018/03	**Postdoctoral Fellow** at the National Radio Astronomy Observatory (NRAO) Green Bank/Green Bank Observatory, West Virginia/USA
2015/12 - 2016/03	**Research Assistant** in the high energy group at the Astronomy Department/University of Würzburg ("Multifrequency Studies Of Giant Pulse Emitting Pulsars"; Advisors: R. Karuppusamy, A. Jessner, V. Kondratiev)
2010/09 - 2014/12	**Research Assistant** in the high energy group at the Astronomy Department/University of Würzburg ("Multifrequency Studies Of Giant Pulse Emitting Pulsars"; Advisors: R. Karuppusamy, A. Jessner, V. Kondratiev)
2008/06 - 2008/09	**Research Assistant** in galactic astronomy group at the Hamburg Observatory ("Chemical Analysis Of The Absorption Lines of BO Mic"; Advisor: U. Wolter)
2007/05 - 2008/01	**Research Assistant** in extragalactic astronomy group at the Hamburg Observatory ("Examination and Indexing Of OH-Masers"; Advisor: D. Engels)

Teaching Activities

2021/01 - 2021/06 **Instructor**: "Astronomical Ideas for Physics majors and minors" at Haverford College
2021/01 - 2021/06 **Instructor**: "Multiwavelength Astronomy for Physics and Astrophysic majors" at Haverford College
2020/09 - 2020/12 **Instructor**: "Classical Mechanics for Physics majors and minors" at Haverford College
2020/09 - 2020/12 **Instructor**: "Introduction to Astrophysics for Physics majors and non-majors" at Haverford College
2020/06 - 2020/08 **Instructor**: "Pulsar Search Collaboratory course for high school students" at West Virginia University (WVU)
2020/05 - 2020/06 **Instructor**: "Descriptive Astronomy for undergraduate majors and non-majors" at West Virginia University (WVU)

Professional Development Activities

Having a deep interest in professional development, I organized several dedicated workshops within the NANOGrav Collaboration. The organization consisted of constructing the talk and a hands on session during which faculty members were advising students at undergraduate and undergraduate level as well as postdocs how to construct, or improve their CVs and resumes.

2021/07	**Talk**: How to write a CV and a Resume (REU Summer Students - Summer 2021)
2019/10	**Workshop**: CV vs. Resume Workshop for Students (NANOGrav Collaboration Meeting - Fall 2019)
2019/04	**Talk**: CV vs. Resume Workshop (Undergraduate NANOGrav Telecon, NANOStars)
2019/03	**Organization & Talk**: CV vs. Resume Workshop (NANOGrav Collaboration Meeting - Spring 2019)

Scientific Mentoring Activities

The nature of my scientific projects has one crucial ingredient: collaborations with colleagues from different countries and cultures. As the leader of a project I am searching for people with skills and experience crucial for the project. Scientists are everywhere and I try to convey that also to students who I mentor and who are coming from different parts of the world.

2021/01 - ongoing	**Supervision** of undergraduate student Gibran-Marc Mourani at Vassar College
2020/11 - ongoing	**Supervision** of undergraduate student Lydia Guertin at Haverford College
2020/11 - ongoing	**Supervision** of undergraduate student Logan de Raspide Ross at Haverford College
2020/09 - ongoing	**Senior Thesis Supervision** of undergraduate student Andrew Johnson at Haverford College
2020/09 - ongoing	**Senior Thesis Supervision** of undergraduate student Kevin Kaufman at Haverford College
2020/01 - ongoing	**Supervision** of undergraduate student Will Jarvis at Oberlin College
2019/09 - 2020/06	**Co-Supervision** of PhD student Tim Olszanski at WVU (in collaboration with Prof. Maura McLaughlin)
2019/06 - 2020/03	**Co-Supervision** of PhD student Avishek Basu at the National Centre for Radio Astrophysics (NCRA) in Pune/India (in collaboration with Prof. Bhal Chandra Joshi)
2019/06 - ongoing	**Co-Supervision** of PhD student Haley Wahl at WVU (in collaboration with Prof. Maura McLaughlin)
2018/09 - 2019/07	**Co-Supervision** of undergraduate student Tessa Maynard at WVU (in collaboration with Prof. Maura McLaughlin)
2018/06 - 2018/08	**Co-Supervision** of summer student David Forman at Hillsdale College (in collaboration with Prof. Tim Dolch)
2018/05 - 2018/06	**Co-Supervision** of ACCESS PSC student Valeria Subirachs (in collaboration with Prof. Maura McLaughlin)
2017/06 - ongoing	**Co-Supervision** of summer student Nohely Miranda at WVU (in collaboration with Prof. Maura McLaughlin)
2016/07 - 2016/08	**Supervision** of high school students at *Physics Inspiring the Next Generation* (PING) camp at the Green Bank Observatory
2014/06 - 2015/09	**Co-Supervision** of PhD student Jacques Maritz at the Astronomy Department/University of the Free State/South Africa (in collaboration with Prof. Pieter Meintjes)
2012/01 - 2015/12	**Co-Supervision** of master student Christoph Wendel at the Astronomy Department/University of Würzburg (in collaboration with Prof. Karl Mannheim & Dominik Elsässer)
2012 - 2017	**Mentoring** of female high school students via the German internet portal "Cybermentor"
2011/10 - 2013/05	**Organisation** of Astrophysics Lab Course and **supervision** of undergraduate students at the Astronomy Department/University of Würzburg
2009 - 2010	**Mentoring** of female high school students via the German internet portal "Cybermentor"

Activities as Group Leader

2020/01 - ongoing	Neurodiversity & Mental Health subgroup of Equity and Inclusion working group of the *International Astronomical Union (IAU)*

Scientific Journal Reviewer

2021/04	Monthly Notices of the Royal Astronomical Society (MNRAS)

Review Panels (Telescopes)

2021/05	**Scientific Reviewer**: Atacama Large Millimeter Array (ALMA) Cycle 8 Proposals
2021/02	**Scientific Reviewer**: Neutron Star Interior Composition ExploreR (NICER) Cycle 3 Proposals
2017/06	**Technical Secretary**: Atacama Large Millimeter Array (ALMA) Cycle 5 Proposals (Topic: Stellar Astrophysics)

Fellowships

2013/10 - 2013/12	Helena Kluyver Fellow at ASTRON

Public & Community Outreach Activities

Since the beginning of my career I have had a deep interest in public and community outreach. I enjoy giving talks to an audience that does not study the same field as I do and try to explain complex astrophysical processes with simplified analogies and by not using any jargon. According to my philosophy I have not understood a process if I cannot explain it without jargon.

2017/11	**Scientific Talk for Teachers**: Math Field Marathon 2017 at Green Bank Observatory (*"Pulsars"*)
2017/07 - 2017/10	**Popular Science Talk**:"Ask an Astronomer" booth for SETI tours organized by Science center in Green Bank
2017/07	**Scientific Talk**: Physics Inspiring the Next Generation Camp at Green Bank Observatory (*"Pulsars"*)
2017/05	**Scientific Talk for Teachers**: Chautauqua Short Course for Science Teachers at Green Bank Observatory (*"Radio Giant Pulses"*)
2016/12	**Scientific Judge**: Pocahontas County Science Fair 2016
2016/09	**Tour Guide**: Co-organization of Open House Day 2016 at the Green Bank Observatory
2016/08	**Organizer**: Scientific Host for Garth Newel Musicians at the Green Bank Observatory
2016/07 - 2018/03	**Tour Guide**: Green Bank Radio Telescope Tour Guide (Non-public Tours)
2016/06, 2016/09	**Popular Science Talk**: "Ask an Astronomer" booth for SETI tours organized by Science center in Green Bank
2014/07 - 2014/12	**Organizer**: Open Day 2015 at the Physics Department/University of Würzburg
2013/04	**Organizer**: Girls Day 2013 at the Physics Department/University of Würzburg
2011 - 2013	**Organizer**: Open Day at the Physics Department/University of Würzburg
2009 - 2010	**Tour Guide**: Self-guided telescope tours of public groups at the Hamburg Observatory/University of Hamburg (program for adults and children)
2009/06	**Tour Guide**: Guided telescope tours at the Hamburg Observatory/University of Hamburg on its Open Day 2009
2008 - 2009	**Organizer**: "Night of Science" at the Hamburg Observatory/University of Hamburg

Outreach Activities - Pulsar Search Collaboratory (PSC)

As the current Project Director of the PSC I regularly organize meetings for middle and high school students, teachers and also undergraduate students who are PSC mentors. That organization usually consists of setting up the time, place of the meeting, invite guest speakers, give scientific talks about my own research, develop tutorials (Linux, gnuplot) and mentor students in their project work.

2020/01	**Organizer**: "PSC Online Training Workshop Spring 2020"
2019/10	**Talk**: "Multiwavelength Studies of Pulsars" (PSC Online Training Workshop Fall 2019)
2019/10 - 2019/11	**Organizer**: "PSC Online Training Workshop Fall 2019"
2019/07	**Scientific Talk**: "The Crab Pulsar" (PSC Camp 2019, Green Bank Observatory)
2019/07	**Tutorial**: "An Introduction to Linux" (PSC Camp 2019, Green Bank Observatory)
2019/05	**Scientific Talk**: "NICER" (PSC Capstone Seminar 2019)
2019/05	**Organizer**: "PSC Capstone Seminar 2019" (West Virginia University)
2019/02	**Scientific Talk**: "Single Radio Pulses" (PSC Online Training Workshop, Spring 2019)
2018/12	**Organizer**: "PSC Undergraduate Mentors Meeting 2018" (West Virginia University)
2018/11	**Scientific Talk**: "The Pulsar Search Collaboratory" (Penn State Abington Visit)
2018/11	**Scientific Talk**: "Introduction to Single Pulse Searches" (PSC Online Training Workshop, Fall 2018)
2018/07	**Tutorial**: "An Introduction to Linux" (PSC Camp 2018 at Green Bank Observatory)
2018/07	**Project Work Developer**: "Observations of Giant Pulses with the 20 meter Radio Telescope" (PSC Camp 2018 at Green Bank Observatory)
2018/07	**Scientific Talk**: "The Crab Pulsar" (PSC Camp 2018 at Green Bank Observatory)
2017/07	**Project Work Developer**: "Observations of Giant Pulses with the 20 meter Radio Telescope" (PSC Camp 2017 at Green Bank Observatory)
2017/07	**Scientific Talk**: "Giant Pulses" (PSC Camp 2017 at Green Bank Observatory)

Language Skills

German	Fluently (written and verbal)
English	Fluently (written and verbal)
Polish	Fluently (written and verbal)
Spanish	Written and verbal form

Computational Skills

Fortran	Short introduction during astronomical practical courses
IDL	Data processing in the context of the Diploma thesis
Python	Data processing in the context of the PhD thesis
Root	Data processing in the context of the PhD thesis
Shell Scripting	Data processing in the context of the PhD thesis

Invited Colloquia

2021/04	SOFIA Collaboration (*"Giant Pulses from Tiny Stars"*)
2020/11	Marshall University (Huntington/USA) (*"How do we measure time?- The case of the perfect clocks in the sky"*)
2019/12	Oberlin College (Oberlin/USA) (*"Giant Pulses from Tiny Stars"*)
2019/06	National Centre for Radio Astrophysics (Pune/India) (*"Multiwavelength Observations of Giant Pulses from Tiny Stars"*)
2019/02	Space Telescope Science Institute (Baltimore/USA) (*"Multiwavelength Observations of Giant Pulses from Tiny Stars"*)
2019/02	George Washington University (Washington DC/USA) (*"Multiwavelength Observations of Giant Pulses from Tiny Stars"*)
2018/11	Penn State Abington (Philadelphia/USA) (*"Giant Pulses from Tiny Stars"*)
2018/02	Yale University (New Haven/USA) (*"A Multiwavelength View of Pulsars"*)
2017/09	ASTRON (Dwingeloo/The Netherlands) (*"Multiwavelength Studies of Crab Pulsar Giant Pulses"*)
2017/09	Max Planck Institute for Radio Astronomy (Bonn/Germany) (*"Multiwavelength Studies of Crab Pulsar Giant Pulses"*)
2017/02	University of Vermont (Burlington/USA) (*"A Multiwavelength View of Fast Rotating Neutron Stars"*, *"The Green Bank Radio Telescope"*)
2017/01	Agnes Scott College (Atlanta/USA) (*"Fast Rotating Neutron Stars"*)
2016/09	Naval Research Laboratory (Washington DC/USA) (*"Fast rotating Neutron Stars across the Electromagnetic Spectrum"*)
2014/12	SKA Postgraduate Bursary Conference 2014 (Stellenbosch/South Africa) (*"Radio Giant Pulse Studies with the SKA"*)
2014/05	Mondello Workshop 2014 (Palermo/Italy) (*"The Pulsar in the Crab Nebula: A Short Review"*)
2014/05	University of Barcelona (Barcelona/Spain) (*"Giant Pulse Radio Emission From The Crab Pulsar"*)

Invited Conference Talks

2020/08	Compact Stars in the QCD Phase Diagram VIII: The era of multimessenger Astronomy (Mumbai/India) (*"The Neutron Star Interior Composition ExploreR - New Results from the Neutron Stars Universe"*)
2019/06	International Pulsar Timing Conference (Pune/India) (*"The Neutron Star Interior Composition Explorer - Mission Accomplishments"*)
2011/05	Frascati Workshop 2011 (Vulcano Island/Italy) (*"Giant pulses From The Crab pulsar -A Multifrequency Study-"*)

Popular Science Talks

2019/12	Hamburg Observatory (Hamburg/Germany) (*"Radioastronomie in Green Bank - ein Observatorium bahnt sich seinen Weg"*) (**in German**)

International Workshops & Conferences (selected)

2021/01	American Astronomical Society Meeting (virtual) **Talk**: *"Single Pulse Polarimetry of the Crab Pulsar"*
2020/06	American Astronomical Society Meeting (virtual) **Talk**: *"Constraints on the Electron Density within the Crab Pulsar's Magnetosphere"*
2020/01	American Astronomical Society Meeting (Honolulu/Hawaii) - **Talk**: *"DM Studies of the Crab Pulsar - A Single Pulse Approach"*
2019/06	International Pulsar Timing Array Conference (Pune/India) - **Talk**: *"DM Studies of the Crab Pulsar - A Single Pulse Approach"*
2018/08	International Astronomical Union General Assembly (Vienna/Austria) - **Poster**: *"A Single Pulse Picture of the Crab pulsar"*
2018/06	International Pulsar Timing Array Conference (Albuquerque/USA) - **Talk**: *"Single Pulse Statistics of the Crab pulsar"*
2017/10	Transformative Science for the Next Decade with the Green Bank Observatory (Green Bank/USA) - **Talk**: *"Multiwavelength Pulsar Astronomy"*
2017/09	IAU Symposium 337 "50 Years of Pulsars" (Jodrell Bank/England) - **Talk**: *"Multiwavelength Studies of Crab Pulsar Giant Pulses"*
2017/03	NRAO Postdoc Symposium 2017 (Charlottesville/USA) - **Talk**: *"High frequency Observations of Radio Pulsars"*
2015/04	Pulsar Science in the SKA Era Workshop 2015 (Cape Town/South Africa) - **Talk**: *"Studies of Anomalous Single Radio Pulses"*
2014/09	**Talk** - German Astronomical Society 2014 meeting (Bamberg/Germany) (*"Studies of Giant Pulses with LOFAR and the SKA"*)
2014/09	44rd Young European Radio Astronomers (YERAC) Conference (Toruń/Poland) - **Talk**: *"Multifrequency Studies of Giant Pulse emitting Pulsars"*
2013/10	43rd Young European Radio Astronomers (YERAC) Conference (Bielefeld/Germany) - **Talk**: *"Multifrequency Observations of Crab Pulsar Giant Pulses"*
2013/09	U.R.S.I. Conference (Miltenberg/Germany) - **Talk**: *"Giant Pulse Emission from the Crab Pulsar"*
2013/07	7th Single Dish Summer School (Arecibo Observatory/Puerto Rico/USA) - **Poster**: *"Multifrequency Observations of Giant Pulses from the Crab Pulsar"*
2013/04	10th IBWS Workshop (Karlovy Vary/Czech Republic) - **Talk**: *"Multifrequency Observations of the Crab Pulsar"*
2012/09	German Astronomical Society Meeting 2012 (Hamburg/Germany) - **Talk**: *"VHE Observations of the Crab Pulsar with the MAGIC Telescope System"*
2012/04	Electromagnetic Radiation of Pulsars and Magnetars Conference (Zielona Gora/Poland) - **Poster**: *"MAGIC Observations of the Crab Pulsar"*
2012/03	National Astronomy Meeting 2012 (Manchester/United Kingdom) - **Talk**: *"A photometrical study of the Crab flare 2010"*
2011/10	High Time Resolution Astrophysics (HTRA) Workshop (Sardinia/Italy) - **Poster**: *"A new view on Giant radio pulses from the Crab pulsar"*

2011/09	German Astronomical Society 2011 meeting (Heidelberg/Germany) - **Poster**: *"A new insight on Giant radio pulses from the Crab pulsar"*
2011/08	International Cosmic Rays Conference 2011 (Bejiging/China) - **Poster**: *"A new view on Giant radio pulses from the Crab pulsar"*
2011/05	Fermi Symposium 2011 (Rome/Italy) - **Poster**: *"Giant radio pulses after the high-energy flare of the Crab pulsar in 2010"*
2011/05	8th IBWS Workshop (Karlovy Vary/Czech Republic) - **Talk**: *"Search for Radio and Gamma-ray correlations of the Crab pulsar"*
2010/10	International School for Young Astronomers (ISYA) (Byurakan/Armenia) - **Talk**: *"Stellar Activitiy of late-type stars"*

Granted Principal Investigator Proposals

2021

N. Lewandowska, M. McLaughlin, J. Cordes, D. Lorimer, S. Chatterjee, F. Crawford, W. Pei
FAST search for radio pulses in the core of M31
FAST TELESCOPE (SQB-2021-0161)
Observing time: 6.0 hours

2020

N. Lewandowska, M. McLaughlin, A. Shearer, A. Golden, R. Mignani, G. Kanbach, A. Slowikowska, B. Rudak, C. Gouiffes, N. Devaney
High Time Resolution Polarimetry Studies of the Crab Pulsar
GREEN BANK TELESCOPE (GBT19B-352)
Observing time: 5.7 hours

N. Lewandowska, M. McLaughlin, A. Shearer, A. Golden, R. Mignani, G. Kanbach, A. Slowikowska, B. Rudak, C. Gouiffes, N. Devaney
High Time Resolution Polarimetry Studies of the Crab Pulsar
ARECIBO TELESCOPE (DDT)
Observing time: 5.7 hours

2019

N. Lewandowska, M. McLaughlin, A. Shearer, A. Golden, R. Mignani, G. Kanbach, A. Slowikowska, B. Rudak, C. Gouiffes, N. Devaney
High Time Resolution Polarimetry Studies of the Crab Pulsar
ARECIBO TELESCOPE (P3431)
Observing time: 5.7 hours

N. Lewandowska, W. Majid, C. Naudet, A. Lommen, Z. Arzoumanian, T. Enoto
Correlation Searches of Radio Giant Pulses and X-rays in Millisecond Pulsars
DEEP SPACE NETWORK
Observing time: 60 hours

N. Lewandowska, M. Burgay, Z. Arzoumanian, T. Enoto, A. Lommen, A. Corongiu
Correlation Searches of Radio Giant Pulses and X-ray Emission in Millisecond Pulsars
SARDINIA RADIO TELESCOPE (P35-19)
Observing time: 44 hours

2018

N. Lewandowska, M. Burgay, Z. Arzoumanian, T. Enoto
Correlation Searches of Radio Giant Pulses and X-ray Emission in Millisecond Pulsars
SARDINIA RADIO TELESCOPE (P44-18)
Observing time: 40 hours

2017

N. Lewandowska, R. Lynch
Statistical Studies of Giant Pulse Emitting Pulsars
ARECIBO TELESCOPE (P3184)
Observing time: 60 hours

2012

N. Lewandowska, J. Hessels, A. Jessner, A. Karastergiou, R. Karuppusamy, V. Kondratiev, M. Kramer, K. Mannheim, C. Sobey, B. Stappers
Multi-frequency observations of giant radio pulse emission from pulsars
EFFELSBERG TELESCOPE (98-12)
Observing time: 24.2 hours

N. Lewandowska, J. Hessels, A. Karastergiou, R. Karuppusamy, V. Kondratiev, M. Kramer, K. Mannheim, C. Sobey, B. Stappers
Multi-frequency observations of giant radio pulse emission from pulsars
WSRT (R13A024)
Observing time: 23 hours

N. Lewandowska, J. Hessels, A. Karastergiou, R. Karuppusamy, V. Kondratiev, M. Kramer, K. Mannheim, C. Sobey, B. Stappers
Multi-frequency observations of giant radio pulse emission from pulsars
LOFAR (LC0_042)
Observing time: 7.0 hours

N. Lewandowska, D. Elsässer, K. Mannheim
Multiwavelength observations of giant radio pulses from the Crab pulsar
EFFELSBERG TELESCOPE (103-12)

N. Lewandowska, D. Elsässer, V. Kondratiev, K. Mannheim
Multiwavelength observations of giant radio pulses from the Crab pulsar
WSRT (R13A023)

N. Lewandowska, D. Elsässer, D. Carreto-Fidalgo, D. Garrido, G. Giavitto, M. Lopez, K. Mannheim, V. Scapin
Search for a correlation of radio giant pulses and MAGIC events from the Crab pulsar
MAGIC

2011

N. Lewandowska, D. Elsässer, V. Kondratiev, K. Mannheim, T. Schweizer
Search for a correlation between radio giant pulses and MAGIC photons from the Crab pulsar
WSRT (R11B026)

N. Lewandowska, D. Elsässer, K. Mannheim, T. Schweizer
Search for a correlation of radio giant pulses and MAGIC events from the Crab pulsar
EFFELSBERG TELESCOPE (55-11)

N. Lewandowska, S. Bonnefoy, D. Elsässer, C. Fruck, G. Giavitto, M. Lopez, K. Mannheim, T. Saito, T. Schweizer
Search for a correlation of radio giant pulses and MAGIC events
MAGIC

N. Lewandowska, D. Elsässer, V. Kondratiev, K. Mannheim, T. Schweizer
Search for a correlation between radio giant pulses and MAGIC photons from the Crab pulsar
WSRT (R11A026)

2010

N. Lewandowska, D. Elsässer, K. Mannheim, T. Schweizer
Search for a correlation of radio giant pulses and MAGIC Events from the Crab pulsar
EFFELSBERG TELESCOPE (126-10)

Granted Co-Investigator Proposals

2019

N. Devaney, J. Heyl, A. Shearer, C. Gouiffes, A. Slowikowska, P. Laurent, A. Golden N. Lewandowska, G. Kanbach, R. Mignani, F. Marshall, B. Rudak
Phase-resolved Optical Polarimetric Observations of the Vela, Crab and PSR B0540-69 Pulsars
GEMINI SOUTH TELESCOPE (proposal period: 104A)
Observing time: 40 hours

A. Bonsall, A. Seymour, T. Ghosh, R. Minchin, C. Slater, M. McLaughlin, N. Lewandowska N. Garver-Daniels, R. Lynch, S.A. Heatherly
Drift Scan Survey for Pulsars, FRBs, Radio Transients and Gas in Galaxies
GREEN BANK TELESCOPE (GBT19A-474)
Observing time: 180 hours

2018

A. Bonsall, A. Seymour, N. Lewandowska, M. Mclaughlin, R. Lynch, S. Heatherly
Drift Scan Survey for Pulsars, Fast Radio Bursts, and other Radio Transients
GREEN BANK TELESCOPE (GBT18A-478)
Observing time: 12 hours

Publications (ADS Link)

2021

N. Lewandowska, P. Demorest, T. Hankins, M.A. McLaughlin
Searches for Emission Component dependent Dispersion Measure using Single Pulses from the Crab Pulsar
(**in preparation for submission to the Astrophysical Journal**)

H.M. Wahl, ..., **N. Lewandowska**, W. Zhu
The NANOGrav 12.5-Year Data Set: Polarimetry, Rotation Measures, and Galactic Magnetic Field Strengths from NANOGrav Observations with the Green Bank Telescope
(**arXiv:2104.05723**)
Citations: 1

T. Enoto, ..., **N. Lewandowska**, ..., S.J. Tanaka
Discovery of X-ray Enhancement Coinciding with Giant Radio Pulses from the Crab Pulsar
(**Science, Volume 372, Issue 6538, pp. 187-190**)
Citations: 1

-White Papers-

D.A. Roshi, ..., **N. Lewandowska**, ..., L.F. Zambrano-Marin
The Future Of The Arecibo Observatory: The Next Generation Arecibo Telescope
(**arXiv:2103.01367**)

2020

D. Rowan, ..., **N. Lewandowska** and the NICER Timing Group
A NICER View of Spectral and Profile Evolution for Three X-ray Emitting Millisecond Pulsars
(**The Astrophysical Journal, Volume 892, Issue 2, id.150, arXiv:2001.11513**)
Citations: 0

M.L. Ahnen, ..., **N. Lewandowska**, ... and the MAGIC Collaboration
Corresponding authors: N. Lewandowska, T. Saito
Statistics of VHE γ-rays in temporal association with radio giant pulses from the Crab pulsar
(**Astronomy & Astrophysics, Volume 634, id.A25, 14 pp., arXiv:1911.00634**)
Citations: 3

H. Blumer, ..., **N. Lewandowska**..., S. Au
The Pulsar Search Collaboratory: Current Status and Future Prospects
American Journal of Physics, 2020, 88. Jg., Nr. 1, S. 31-38.; arXiv:1909.05104
Citations: 1

2019

J. Deneva, ..., **N. Lewandowska** and the NICER Collaboration and the NANOGrav Collaboration
High-Precision X-ray Timing of Three Millisecond Pulsars with NICER: Stability Estimates and Comparison with Radio
(**The Astrophysics Journal, Volume 874, Issue 2, article id. 160, 13; arXiv:1902.07130**)
Citations: 8

-Decadal Survey 2020 White Papers-

D. Norman, ..., **N. Lewandowska**, ..., S. Kannappan
Tying Research Funding to Progress on Inclusion
(**https://baas.aas.org/wp-content/uploads/2019/09/014_norman.pdf**)

K. O'Neil, ..., **N. Lewandowska**, ..., F. Villaescusa-Navarro
The Case for a Fully Funded Green Bank Telescope
(**https://baas.aas.org/wp-content/uploads/2019/09/070_o_neil.pdf**
K. O'Neil, ..., **N. Lewandowska**, ..., T. Wong
The Role of National Observatories in Professional Astronomy Training
(**https://baas.aas.org/wp-content/uploads/2019/09/072_o_neil.pdf**)

K. O'Neil, ..., **N. Lewandowska**, ..., R. Bindu
Green Bank Observatory — Broader Impact
(**https://baas.aas.org/wp-content/uploads/2019/09/073_o_neil.pdf**)

The NANOGrav Collaboration, ..., **N. Lewandowska**, ..., K. Williamson
NANOGrav Education and Outreach: Growing a Diverse and Inclusive Collaboration for Low-Frequency Gravitational Wave Astronomy
(**arXiv:1807.07348**)

J. Rankin, ..., **N. Lewandowska**, ..., S. Ransom
A Plasma-Physical Understanding of Pulsar Radio Emission Physics
(**submitted**)

R. Lynch, ..., **N. Lewandowska**, ..., Ingrid Stairs
The Virtues of Time and Cadence for Pulsars and Fast Transients
(**submitted**)

D. Lorimer, ..., **N. Lewandowska**, ..., S. Chatterjee
Radio Pulsar Populations
(**arXiv:1903.06526**)
Citations: 4

D. Stinebring, ..., **N. Lewandowska**, ..., M. P. Surnis
Twelve Decades: Probing the Interstellar Medium from kiloparsec to sub-AU scales
(**arXiv:1903.07370**)

2016

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Teraelectronvolt pulsed emission from the Crab Pulsar detected by MAGIC
(**Astronomy & Astrophysics, Volume 585, id.A133, 6 pp.**)
Citations: 63

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Measurement of the Crab Nebula spectrum over three decades in energy with the MAGIC telescopes
(**Journal of High Energy Astrophysics, Volume 5, p. 30-38**)
Citations: 51

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Detection of bridge emission above 50 GeV from the Crab pulsar with the MAGIC telescopes
(**Astronomy & Astrophysics, Volume 565, id.L12, 5 pp.**)
Citations: 25

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Insights into the emission of the blazar 1ES 1011+496 through unprecedented broadband observations during 2011 and 2012
(**Astronomy & Astrophysics, Volume 591, id.A10, 14 pp.**)
Citations: 13

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
The major upgrade of the MAGIC telescopes, Part II: The achieved physics performance using the Crab Nebula observations
(**Astroparticle Physics, Volume 72, p. 76-94, arXiv:1409.5594**)
Citations: 231

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
The major upgrade of the MAGIC telescopes, Part I: The hardware improvements and the commissioning of the system
(**Astroparticle Physics, Volume 72, p. 61-75, arXiv:1409.6073**)
Citations: 109

2015

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
First NuSTAR Observations of Mrk 501 within a Radio to TeV Multi-Instrument Campaign
(**The Astrophysical Journal, Volume 812, Issue 1, article id. 65, 22, arXiv:1509.04936**)
Citations: 41

M. L. Ahnen, ..., **N. Lewandowska** and the MAGIC Collaboration
Very-high-energy γ-ray observations of novae and dwarf novae with the MAGIC telescopes
(**Astronomy & Astrophysics, Volume 582, id.A67, 7 pp.**)
Citations:

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
MAGIC detection of short-term variability of the high-peaked BL Lac object 1ES 0806+524
(**Monthly Notices of the Royal Astronomical Society, Volume 451, Issue 1, p.739-750**)
Citations: 17

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Probing the very high energy γ-ray spectral curvature in the blazar PG 1553+113 with the MAGIC telescopes
(**Monthly Notices of the Royal Astronomical Society, Volume 450, Issue 4, p.4399-4410**)
Citations: 19

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Unprecedented study of the broadband emission of Mrk 421 during flaring activity in March 2010
(**Astronomy & Astrophysics, Volume 578, id.A22, 26 pp.**)
Citations: 72

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
The 2009 multiwavelength campaign on Mrk 421: Variability and correlation studies
(**Astronomy & Astrophysics, Volume 576, id.A126, 18 pp.**)
Citations: 64

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
MAGIC observations of MWC 656, the only known Be/BH system
(**Astronomy & Astrophysics, Volume 576, id.A36, 5**)
Citations: 8

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Discovery of very high energy gamma-ray emission from the blazar 1ES 0033+595 by the MAGIC telescopes
(**Monthly Notices of the Royal Astronomical Society, Volume 446, Issue 1, p.217-225**)
Citations: 9

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Multiwavelength observations of Mrk 501 in 2008
(**Astronomy & Astrophysics, Volume 573, id.A50, 12**)
Citations: 33

2014

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
First broadband characterization and redshift determination of the VHE blazar MAGIC J2001+439
(**Astronomy & Astrophysics, Volume 572, id.A121, 16**)
Citations: 18

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Black hole lightning due to particle acceleration at subhorizon scales
(**Science, Volume 346, Issue 6213, pp. 1080-1084**)
Citations: 104

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
MAGIC reveals a complex morphology within the unidentified gamma-ray source HESS J1857+026
(**Astronomy & Astrophysics, Volume 571, id.A96, 8**)
Citations: 10

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
MAGIC gamma-ray and multi-frequency observations of flat spectrum radio quasar PKS 1510-089 in early 2012
(**Astronomy & Astrophysics, Volume 569, id.A46, 21**)
Citations: 67

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
MAGIC search for VHE γ-ray emission from AE Aquarii in a multiwavelength context
(**arXiv:1407.3707**)
Citations: 8

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Discovery of TeV γ-ray emission from the pulsar wind nebula 3C 58 by MAGIC
(**Astronomy & Astrophysics, Volume 567, id.L8, 5**)
Citations: 23

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
MAGIC long-term study of the distant TeV blazar PKS 1424+240 in a multiwavelength context
(**Astronomy & Astrophysics, Volume 567, id.A135, 15**)
Citations: 42

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
MAGIC observations and multifrequency properties of the flat spectrum radio quasar 3C 279 in 2011
(**Astronomy & Astrophysics, Volume 567, id.A41, 14**)
Citations: 30

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Search for very high energy gamma-rays from the z = 0.896 quasar 4C +55.17 with the MAGIC telescopes
(**Monthly Notices of the Royal Astronomical Society, Volume 440, Issue 1, p.530-535**)
Citations: 1

M.Ackermann, ..., **N. Lewandowska** and the MAGIC Collaboration
Multifrequency Studies of the Peculiar Quasar 4C +21.35 during the 2010 Flaring Activity
(**The Astrophysical Journal, Volume 786, Issue 2, article id. 157, 17**)
Citations: 25

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Contemporaneous observations of the radio galaxy NGC 1275 from radio to very high energy γ-rays
(**Astronomy & Astrophysics, Volume 564, id.A5, 13**)
Citations: 43

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Rapid and multi-band variability of the TeV-bright active nucleus of the galaxy IC 310
(**arXiv:1305.5147**)
Citations: 48

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Discovery of very high energy gamma-ray emission from the blazar 1ES 1727+502 with the MAGIC Telescopes
(**Astronomy & Astrophysics, Volume 563, id.A90, 6**)
Citations: 18

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
MAGIC upper limits on the GRB 090102 afterglow
(**Monthly Notices of the Royal Astronomical Society, Volume 437, Issue 4, p.3103-3111**)
Citations: 16

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Optimized dark matter searches in deep observations of Segue 1 with MAGIC
(**Journal of Cosmology and Astroparticle Physics, Issue 02, article id. 008**)
Citations: 112

2013

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
The simultaneous low state spectral energy distribution of 1ES 2344+514 from radio to very high energies
(**Astronomy & Astrophysics, Volume 556, id.A67, 28**)
Citations: 19

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Very high energy gamma-ray observation of the peculiar transient event Swift J1644+57 with the MAGIC telescopes and AGILE
(**Astronomy & Astrophysics, Volume 552, id.A112, 6**)
Citations: xx

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Observations of the magnetars 4U 0142+61 and 1E 2259+586 with the MAGIC telescopes
(**Astronomy & Astrophysics, Volume 549, id.A23, 4**)
Citations: 4

2012

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Phase-resolved energy spectra of the Crab pulsar in the range of 50-400 GeV measured with the MAGIC telescopes
(**Astronomy & Astrophysics, Volume 540, id.A69, 6 pp.**)
Citations: 86

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Discovery of VHE γ-rays from the blazar 1ES 1215+303 with the MAGIC telescopes and simultaneous multi-wavelength observations
(**Astronomy & Astrophysics, Volume 544, id.A142, 10**)
Citations: 46

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
High zenith angle observations of PKS 2155-304 with the MAGIC-I telescope
(**Astronomy & Astrophysics, Volume 544, id.A75, 9**)
Citations: 5

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Detection of VHE γ-Rays from HESS J0632+057 during the 2011 February X-Ray Outburst with the MAGIC Telescopes
(**The Astrophysical Journal Letters, Volume 754, Issue 1, article id. L10**)
Citations: xx

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Constraining cosmic rays and magnetic fields in the Perseus galaxy cluster with TeV observations by the MAGIC telescopes
(**Astronomy & Astrophysics, Volume 541, id.A99, 12**)
Citations: 59

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Morphological and spectral properties of the W51 region measured with the MAGIC telescopes
(**Astronomy & Astrophysics, Volume 541, id.A13, 11**)
Citations: 69

J. Aleksić, ..., **N. Lewandowska** and the MAGIC Collaboration
Detection of very-high energy γ-ray emission from NGC 1275 by the MAGIC telescopes
(**Astronomy & Astrophysics, Volume 539, id.L2, 4**)
Citations: 75

2010

H.M. Günther, **N. Lewandowska**, M.P.G. Hundertmark, H. Steinle, J.H.M.M. Schmitt, D. Buckley, S. Crawford, D.O' Donoghue, P. Vaisanen
The absence of sub-minute periodicity in classical T-Tauri stars
(**Astronomy and Astrophysics, Volume 518, id.A54, 8 pp.**)
Citations: 23

Book Contributions (refereed)

2020

G. Wolfschmidt, X. Wu, H. Keller, D. Lemke, K. Mattila, **N. Lewandowska**, N. Junkes, A. Hüttermann, S. Hoffmann, H. Gropp, D. Fischer
Cosmochemistry - History of Discovery and Research of Chemical Elements in the Cosmos
(**History of Natural Sciences, German Astronomical Society, Volume 50**)

2015

A. Karastergiou, S. Johnston, N. Andersson, R. Breton, P. Brook, C. Gwinn, **N. Lewandowska**, E. Keane, M. Kramer, J.-P. Macquart, M. Serylak, R. Shannon, B. Stappers, J. van Leeuwen, J. P. W. Verbiest, P. Weltevrede, G. Wright
Understanding pulsar magnetospheres with the SKA
(**Proceedings of Advancing Astrophysics with the Square Kilometre Array (AASKA14). 9 -13 June, 2014. Giardini Naxos, Italy, arXiv:1501.00126**)

Refereed Proceedings

2015

J. Maritz, P. Meintjes, S. Buchner, **N. Lewandowska**
Timing Noise analysis of HartRAO pulsars: Possible mode switching in the magnetosphere of PSR J1326-5859
(**Proceedings of Science – Annual Conference on High Energy Astrophysics in Southern Africa 2015 (HEASA2015/030**)

2014

N. Lewandowska
The Pulsar in the Crab Nebula
(**Proceedings of Science – Frontier Research in Astrophysics 2014 (FRAPWS2014/015), arXiv:1511.05211, http://pos.sissa.it/archive/conferences/241/030/HEASA2015_030.pdf)**

2012

N. Lewandowska, C. Wendel, V. Kondratiev, D. Elsässer, K. Mannheim
Giant radio pulses of the Crab pulsar: A multifrequency study
(**Memorie della Societa Astronomica Italiana, v.83, p.259 (2012))**

2011

N. Lewandowska, D. Elsässer, K. Mannheim
Search for a correlation between radio giant pulses and VHE Photons of the Crab pulsar
(**Acta Polytechnica, Vol. 51, No. 6, p.34**)

Non-refereed Proceedings

2011

N. Lewandowska
Giant radio pulses from the Crab pulsar revisited
(**Proceedings of the 32nd International Cosmic Ray Conference (ICRC2011), held 11-18 August, 2011 in Beijing, China. Vol. 7 OG2.1-2.2: Cosmic Ray Origin and Galactic Phenomena, p. 224,**
http://www.ihep.ac.cn/english/conference/icrc2011/paper/proc/v7/v7_1148.pdf)

N. Lewandowska, C. Wendel, V. Kondratiev, D. Elsässer, K. Mannheim
A new interpretation of giant radio pulses from the Crab pulsar
(**2011 Fermi Symposium proceedings - eConf C110509, arXiv:1111.0323**)

Popular Science Articles

2016

N. Lewandowska
Was Sterne so alles mit sich bringen - Ein Auszug aus dem Leben einer Astrophysikerin (**in German**)
(**Cybermentor Newsletter No. 3, 2016/10)**