Ryan Norris

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Education

MS Catholic University of America, Physics — May 2012

BS Michigan State University, Lyman Briggs College, Astrophysics Honors Degree — May 2009

Research Experience

Georgia State University, Atlanta, GA — 2013 to present
Graduate Student Researcher, Advisers: Fabien Baron (A), Doug Gies (B)

- Interferometric Imaging of Red Supergiants (A)
- Properties of higher multiplicity binary systems (B)

Goddard Space Flight Center, Greenbelt, MD — 2009 to 2012
Graduate Student Researcher, Adviser: Glenn Wahlgren/Fredrick Bruhweiler

- Infrared spectroscopy of symbiotic stars with the *Spitzer Space Telescope*
- Near-IR and optical spectroscopy of cool stars for abundance determinations using ATLAS12 model atmospheres and SYNTHE synthetic spectra

Goddard Space Flight Center, Greenbelt, MD — Summer 2008
SESI Intern, Adviser: Glenn Wahlgren

- Participated in Science and Engineering Summer Internship (SESI): Near-IR and visual spectroscopy and modeling of cool stars for abundance determination using ATLAS12 and SYNTHE

National Superconducting Cyclotron Laboratory, East Lansing, MI — 2007-2008
Undergraduate Researcher, Adviser: Kryzstof Starosta

- Data reduction of experiments studying rare isotopes, assisted in setting up and running experiments, produced documentation on calibrations for the Segmented Germanium Detector Array (SEGA) (see: http://groups.nscl.msu.edu/ddas/ (click on "Procedures")

National Superconducting Cyclotron Laboratory, East Lansing, MI — 2005-2007
Professorial Assistanship, Adviser: Kryzstof Starosta

- See above

PUBLICATIONS

Journal Publications

1. Chiavassa, A., **Norris, R**., Montargès, M., et al. “Asymmetries on red giant branch surfaces from CHARA/MIRC optical interferometry”, 2017, Astronomy and Astrophysics, 600L, 2C

2. Neilson, Hilding R., Baron, Fabien, **Norris, Ryan**, Kloppenborg, Brian, Lester, John B., “Stellar Atmospheres, Atmospheric Extension, and Fundamental Parameters: Weighing Stars Using the Stellar Mass Index”, 2016, Astrophysical Journal , 830, 103N

3. Goad, M.R., et al., “Space Telescope and Optical Reverberation Mapping Project. IV. Anomalous Behavior of the Broad Ultraviolet Emission Lines in NGC 5548”, 2016, Astrophysical Journal , 824, 11G

4. Fausnaugh, M.M.,et al., “Space Telescope and Optical Reverberation Mapping Project. III. Optical Continuum Emission and Broadband Time Delays in NGC 5548”, 2016, Astrophysical Journal , 821, 56F

5. Aldoretta, E. et al. “The Multiplicity of Masssive Stars: A High Angular Resolution Survey with the HST Fine Guidance Sensor”, 2015, Astronomical Journal, 149, 26

6. Bentz, M.C., et al. “The Mass of the Central Black Hole in the Nearby Seyfert Galaxy NGC 5273”, 2014, Astrophysical Journal , 796, 8

7. Lebzelter, T., Heiter, U. Abia, C., et al, . "Comparative Modelling of the Spectra of Cool Giants", 2011, Astronomy & Astrophysics, 547, A108

8. Adrich, P., Enderich, D., Miller, D., Moeller, V., **Norris, R.P**., Starosta, K., Vaman, C. Voss, P.J.,Dewald, A. , “A Simulation Tool for Recoil Distance Method Lifetime Measurements at NSCL”, 2009, Nucl. Instr. and Meth. A 598, 454

9. Dewald, A., et al. “Collectivity of Neutron-rich Palladium Isotopes and the Valence Proton Symmetry”, 2008, Phys. Rev. C. 78, 051302

10. Starosta, K., et al., “Shape and structure of N=Z 64Ge; Electromagnetic Transition Rates from the Application of the Recoil Distance Method to a Knockout Reaction”, 2007, Phys. Rev. Lett. 99, 042503

11. Chester, A., et al., “Application of the Time of Flight Technique for Lifetime Measurements with Relativistic Beams of Heavy Nuclei ”, 2006 Nucl. Instr. and Meth. A 562, 230

Abstracts and Proceedings:

12. **Norris, Ryan P.,** Baron, Fabien. “Seeing Stars Like Never Before: A Multi-Year Interferometric Imaging Study of Red Supergiants in the H-Band”, *American Astronomical Society Meeting* (AAS#229,id.232.01)

13. **Norris, Ryan P.**, Bruhwiler, F.C., McCollum, B., Wahlgren, G.M. "Studying the Environment of Symbiotic Stars with Spitzer IRS Spectroscopy", *American Astronomical Society Meeting* (AAS#219, #433.02)
14. **Norris, Ryan P.**, Wahlgren, G.M., Bruhweiler, F.C., McCollum, B. "The Infrared Variation of the Symbiotic Star BI Cru", Why Galaxies Care about AGB Stars II: Shining Examples and Common Inhabitants, *ASP Conf. Series.* , 445, 359, 2011

15. **Norris, Ryan P**.,Wahlgren, G. M., Blackwell-Whitehead, R. 2010, "The Abundance of Yttrium in Cool Stars", *American Astronomical Society Meeting* (AAS#215, #425.22)

16. Wahlgren, Glenn M., Carpenter, Kenneth G., **Norris, Ryan P.** 2009, "Heavy Elements and Cool Stars", Cool Stars, Stellar Systems and the Sun: Proceedings of the 15th Cambridge Workshop on Cool Stars, Stellar Systems and the Sun. AIP Conference Proceedings, 1094, 892 (2009)

17. Dewald, A., et al., "Plunger lifetime measurements after Coulomb excitation at intermediate beam energies", Capture Gamma Ray Spectroscopy and Related Topics: Proceedings of the 13th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics. AIP Conference Proceedings, 1090, 135 (2009)

18. Voss, P., et al. "Probing Exotic, Particle-Decay Isotopes: A New Application of the Recoil Distance Method", *American Physical Society, Annual Meeting of the Division of Nuclear Physics* (#BD.003) 2008

19. **Norris, R. P**. et al,. "Segment Energy Calibrations for Segmented Germanium Detectors", *American Physical Society, Annual Meeting of the Division of Nuclear Physics* (#DA.059) 2007

Presentations

"Updates on an Imaging Survey of Red Supergiants with MIRC", CHARA 2016 Meeting Year 12 Science Review, Nice, France, March 15, 2016

"An Imaging Survey of Red Supergiants", CHARA 2015 Meeting Year 11 Science Review, Atlanta, USA, March 20, 2015

"Modeling Two K Stars with ATLAS Grids", GREAT Workshop on Comparative Modeling of Stellar Spectra, Vienna, Austria, August, 23, 2011.

Funding and Awards

Fizeau Exchange Program Travel Award 2016
Grant to travel to France to work with other astronomers for two weeks

Outstanding Second Year Graduate Student in Astronomy 2015
Georgia State University

Graduate Teaching Assistant Award in Astronomy 2014
Georgia State University

University Doctoral Fellowship 2012-Present
Georgia State University
Departmental Fellowship 2009-2012
Three year fellowship for study in physics at the Catholic University of America

Conference Experience for Undergraduates Travel Award 2007
Grant for travel to present research at Division of Nuclear Physics American Physical Society Meeting (Newport News, VA)

National Merit Scholar 2005-2009

Professorial Assistantship 2005-2007
Two year research position for promising students entering Michigan State University

Observing Experience

CHARA Array (MIRC) Mt. Wilson, CA	October 6-16, 2016
NASA Infrared Telescope Facility Mauna Kea, HI	September 6, 26, 2016
CHARA Array (MIRC) Mt. Wilson, CA	August 25-Sept 10, 2016
CHARA Array (MIRC) Mt. Wilson, CA	October 23-27, 2015
CHARA Array (MIRC) Mt. Wilson, CA	August 17-24, 2015
Miller 24" Telescope, Hard Labor Creek Observatory Rutledge, GA	Spring, Summer 2014
Perkins 72" Telescope (MIMIR), Lowell Observatory Flagstaff, AZ	November 12-16, 2013

Teaching Experience

ASTRO 1020 (course instructor) Spring 2017
Georgia State University, 41 students.

ASTR 1010 LAB (Introductory Astronomy) 2012-2016
Georgia State University
10 Lab Sections (~15 students/section)

ASTR 1020 LAB (Introductory Astronomy) 2013-2016
Georgia State University
9 Lab Sections (~20 students/section)

Professional Service

Local Organizing Committee
IAU Symposium 314: Young Stars and Planets Near the Sun
Atlanta, GA May 11-15, 2015

GSU Graduate Student Alliance
Astronomy Reprsentative 2014-2016
President 2016-2017

Astro Peer Advising Leaders
Mentor 2014-Presidnet
Treasurer 2015-2016
President 2016-2017

GSU College of Arts & Sciences Graduate Council
Graduate Student Representative 2013-2014, 2014-2015 school years

Conference Committee
CUA Graduate Student Association 1st Annual Interdisciplinary Conference, 2010: Reviewed and judged submitted papers . Assisted with logistics on day of conference

CUA Graduate Student Association
Senator for Physics Department 2010-2012

Journal of Young Investigators
Career Researcher 2008-2009
Wrote articles about careers in science and professional development for the undergraduate run, NSF-supported online research journal, *The Journal of Young Investigators*

Outreach

Fernbank Museum Science at Hand Day
November 9, 2014

Stow-Munroe Falls Kimpton Junior High
Presentation: *What astronomers do and how you can be one*
December 20, 2013 Stow, Ohio

Fernbank Museum Astronomy Day
September 22, 2012

Hard Labor Creek Observatory Open Houses and School Visits
2012: September 22, October 20, December 6
2013: April 20,May 18, September 14, October 12
2014: October 4
2015: March 21, October 24
2016: April 16, July 9

Smithsonian Folklife Festival (NASA/WMAP Exhibit)
June 29, 2008

Michigan State Science Theatre
Member/Skit Author, Michigan State University, 2005-2009
Performed skits and presented demos on science for K-12 in Lansing area; helped write and develop a skit on nanotechnology and quantum mechanics

Professional Affiliations

American Astronomical Society

Sigma Pi Sigma

Languages

English: Native Language

Latin: Basic Reading Skills

Computer Skills

Programming: Julia, IDL, Python, C++, HTML+CSS, some experience with Fortran

Applications: Windows Office Suite, LaTeX, Mathematica, *Spitzer* Data Reduction software, IRAF

Other

U.S. Citizen

References

Available upon request