

NICOLE GUGLIUCCI

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EDUCATION

Ph.D. Candidate, Astronomy, University of Virginia, expected Summer 2012
M.S., Astronomy, University of Virginia, May 2007
B.A., Physics, Lycoming College, May 2005; Valedictorian, summa cum laude, Department Honors

DISSERTATION RESEARCH

Calibration of Precision Array to Probe the Epoch of Reionization – Advisor: Richard Bradley
PAPER is a wide-field, low frequency radio telescope under construction in the Karoo, South Africa, with prototype in Green Bank, WV. I am using PAPER data to characterize the ionosphere and the instrument itself, while taking part in commissioning activities.

RESEARCH EXPERIENCE

Searching for Extragalactic Water Masers with Green Bank Telescope – Advisor: James Braatz
Polarized Compact Symmetric Objects with Very Long Baseline Array – Advisor: Greg Taylor
NRAO Summer Student (2004, 2005)
An Unbiased Search for Methanol Masers with Haystack 37-m – Advisor: Preethi Pratap (2005)
Polarimetry of a New Core Outburst in 3C 273 – Advisor: Joanne Attridge
MIT Haystack Observatory Summer Student (2003)

TEACHING EXPERIENCE

Workshop Facilitator, University of Virginia (August 2011)
“Teaching the First Day of Class” at August Teaching Workshop
Instructor, University of Virginia
ASTR 3420: Life Beyond Earth (Summer 2010) - Created original lectures and tests.
Teaching Assistant, University of Virginia
Radio Astronomy Instrumentation (Spring 2009)
TA for graduate course. Designed, advised, and graded laboratory exercises.
Introductory Astronomy (Fall 2005 to Spring 2007)
Responsibilities include proctoring observing labs, running constellation activities, grading, holding review sessions, and giving substitute lectures.
Tutor, Athletics Academic Affairs, University of Virginia (Fall 2007 to Fall 2009)

OUTREACH

Volunteer for “Dark Skies, Bright Kids”
Work with elementary school students in rural Albemarle County. Developed lesson plans for hands-on activities and promoted activities through social media.
Freelance blogger for Discovery Channel Space News
Invited speaker at 2nd Annual Carl Sagan Day and 3rd Annual Atlanta Skeptics Star Party
Mentor at NRAO Undergraduate Astronomy Institute in Green Bank, West Virginia (May 2010)
Developed posters, talks, and demos for NRAO Open House
Tours, observing at UVa’s Leander McCormick Observatory and Fan Mountain Observatory
Produced four podcasts for 365 Days of Astronomy

AWARDS AND HONORS

Robert J. Huskey Research Exhibition - Best Oral Presentation in Physical Sciences, 2010
 Virginia Space Grant Consortium Aerospace Graduate Research Fellowship, 2007-2010
 Phi Kappa Phi Graduate Fellow, 2005-2006
 Society of Physics Students Leadership Scholarship, 2004
 Valedictorian Scholarship, Lycoming College, 2001-2005

PUBLICATIONS

Gugliucci, Nicole E.; Bradley, Richard F.; Parsons, Aaron R.; Jacobs, Daniel C.; Carilli, Chris L.; Aguirre, James E.; Pober, Jonathan C.; Parashare, Chaitali R.; Moore, David F.; 2012 (in prep), Radio Science, special issue. "Effects of the Ionosphere on the Precision Array to Probe the Epoch of Reionization"

Pober, Jonathan C.; Parsons, Aaron R.; Jacobs, Daniel C.; Aguirre, James E.; Bradley, Richard F.; Carilli, Chris L.; Gugliucci, Nicole E.; Moore, David F.; Parashare, Chaitali R. 2012 (in prep) "A Technique for Primary Beam Calibration of Drift-Scanning, Wide-Field Antenna Elements"

Jacobs, Daniel C.; Aguirre, James E.; Parsons, Aaron R.; Pober, Jonathan C.; Bradley, Richard F.; Carilli, Chris L.; Gugliucci, Nicole E.; Manley, Jason R.; van der Merwe, Carel; Moore, David F.; Parashare, Chaitali R. 2011, ApJ, 734, 34. "New 145 MHz Source Measurements by PAPER in the Southern Sky"

Parsons, Aaron R.; Backer, Donald C.; Bradley, Richard F.; Aguirre, James E.; Benoit, Erin E.; Carilli, Chris L.; Foster, Griffin S.; Gugliucci, Nicole E.; Herne, David; Jacobs, Daniel C.; Lynch, Mervyn J.; Manley, Jason R.; Parashare, Chaitali R.; Werthimer, Daniel J.; Wright, Melvyn C. H. 2010, AJ, 139, 1468. "The Precision Array for Probing the Epoch of Reionization: 8 Station Results"

Braatz, J. A. and Gugliucci, N. E. 2008, ApJ, 678, 96
 "The Discovery of Water Maser Emission from Eight Nearby Galaxies"

Gugliucci, N. E., Taylor, G. B., Peck, A. B., and Giroletti, M. 2007, ApJ, 661, 78.
 "Polarimetry of Compact Symmetric Objects."

Gugliucci, Nicole. "Wilkinson Microwave Anisotropy Probe." USA in Space, 3rd ed. Salem Press, 2006.

Taylor, G. B., Gugliucci, N. E., Fabian, A. C., Sanders, J. S., Gentile, G., and Allen, S.W. 2006, MNRAS, 368, 1500. "Magnetic fields in the centre of the Perseus cluster."

Gugliucci, N. E., Taylor, G. B., Peck, A. B., and Giroletti, M. 2005, ApJ, 622, 136.
 "Dating COINS: Kinematic Ages for Compact Symmetric Objects."

CONFERENCE PRESENTATIONS AND POSTERS

"Probing the Ionosphere with PAPER" (Updated) Presented at International Union of Radio Science (URSI) and at the University of Virginia Astronomy Symposium - January 2011

"Probing The Ionosphere With PAPER In Green Bank, WV" Presented at Robert J. Huskey Research Exhibition and at the Virginia Space Grant Consortium Student Research Conference April 2010

"Probing The Ionosphere With PAPER In Green Bank, WV" Gugliucci, N., Bradley, R., PAPER Collaboration. Poster at 215th Meeting of American Astronomical Society - January 2010

"Twitter 101 for Astronomers" Gugliucci, N., Gay, P. L. Poster at 215th Meeting of American Astronomical Society - January 2010

"Low Frequency, Wide Field Radio Astronomy with PAPER." Presented at the Virginia Space Grant Consortium Student Research Conference - April 2009

"PAPER's Sweet Sixteen: Imaging the Low Frequency Sky with a Sixteen Element Array." Presented at International Union of Radio Science (URSI) and at the University of Virginia Astronomy Symposium - January 2009

- "Low Frequency, Wide Field Radio Astronomy with PAPER." Presented at the Virginia Space Grant Consortium Student Research Conference - April 2008
- "PAPER: The Precision Array To Probe The Epoch Of Reionization" Backer, Donald C.; Parsons, A.; Bradley, R.; Parashare, C.; Gugliucci, N.; Mastrantonio, E.; Herne, D.; Lynch, M.; Wright, M.; Werhimer, D.; Carilli, C.; Datta, A.; Aguirre, J. Poster at 211th Meeting of American Astronomical Society - January 2008
- "A GBT Snapshot Survey for Water Megamasers in Nearby Galaxies" Gugliucci, Nicole E. and Braatz, J. A. Poster at 211th Meeting of American Astronomical Society - January 2008
- "Compact Symmetric Objects: The Smallest AGN." Presented at the University of Virginia Astronomy Symposium - January 2006
- "Polarimetry of Compact Symmetric Objects." Gugliucci, N. E., Taylor, G. B., Peck, A. B., and Giroletti, M. Poster at 207th Meeting of American Astronomical Society - January 2006
- "Dating COINS: Kinematic Ages for Compact Symmetric Objects." Gugliucci, N., Taylor, G. B., Peck, A. B., Giroletti, M. Poster at 205th Meeting of American Astronomical Society - January 2005
- "VLBI Polarimetry of a New Core Outburst in 3C 273 at 43 and 86 GHz." Gugliucci, N. E., Attridge, J. M., Phillips, R. B. Poster at 203rd Meeting of American Astronomical Society - January 2004

PROFESSIONAL DEVELOPMENT

Tomorrow's Professor Today, University of Virginia

Selected for a two-year, professional development program for graduate students, run by the Teaching Resource Center. Activities include workshops, pedagogy seminar, classroom observations, and faculty interviews.

Center for Astronomy Education Workshop (January 2010)

Participant in Improving the College Introductory Astronomy Survey Course for Non-Science Majors Through Active Engagement: A Tier I (Introductory) Workshop

COMPUTER EXPERIENCE

Astronomy Packages: CASA, AIPS, Difmap, Miriad, GBTIDL, SCHED, JObserve, aipy

Languages: IDL, HTML, some Python

SELECTED PUBLIC LECTURES

Host Astronomer for the 2nd Annual Skeptics Under the Stars in Wisconsin, October 2011

Co-host of 3rd Annual Atlanta Skeptics Charity Star Party in Atlanta, GA, September 2011

"A True Story of Astronomy in the Desert" Presented at the 2011 West Virginia Governor's School in Green Bank, WV, August 2011

"Probing the Universe with PAPER" Talk for the Astronomy Winter School at South African Astronomical Observatory, July 2011

"50 Years of SETI" invited talk and "Hands-On Astronomy" Teacher Workshop at 2nd Annual Carl Sagan Day in Ft. Lauderdale, FL, November 2010

"Low Frequency Radio Astronomy and PAPER." Science talk for the NRAO Undergraduate Astronomy Institute, May 2010

"PAPER and the Epoch of Reionization." Presented at NRAO Open House, October 2009

"What is Radio Astronomy?" Mini-lecture for Fan Mountain Observatory Open House, April 2009

"Search for the Epoch of Reionization: The Return to Low Frequency Radio Astronomy." Presented for the Charlottesville Astronomical Society, September 2008, and Osher Lifelong Learning Institute, October 2008

"Measuring the Distance Scale and Dark Energy with Extragalactic Water Masers." Presented at the Lycoming College Astronomy and Physics Colloquium, March 2006

"Onward to the Red Planet." Presentation with Richard Erickson at the Lycoming College Symposium on "Space: A Revolution in Perspective," October 2004