

# Eric William Grashorn

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CONTACT INFORMATION	Center for Cosmology and AstroParticle Physics Ohio State University 191 West Woodruff Ave Columbus, OH 43210 USA	<i>Voice:</i> 614.247.8409 <i>Fax:</i> 614.292.5713 <i>E-mail:</i> grashorn@mps.ohio-state.edu <i>URL:</i> www.physics.ohio-state.edu/~ewgrashorn
EDUCATION	<b>University of Minnesota</b> , Minneapolis, Minnesota USA Ph.D., Experimental Particle Physics • Dissertation Topic: “Particle Astrophysics with the MINOS Far Detector” Advisors: Prof. Marvin L. Marshak, Prof. Alec T. Habig <b>June, 2008</b>	
	<b>University of Minnesota</b> , Duluth, Minnesota USA M.S., Physics • Thesis Topic: “A Search for a Cosmic Ray Point Source with the MINOS Far Detector” Advisor: Prof. Alec T. Habig <b>August, 2005</b>	
	<b>Ball State University</b> , Muncie, Indiana USA B.S., Physics • Research Project: “Luminosity Classifications of Low-Mass Red Stars” Advisor: Prof. Thomas H. Robertson <b>June, 2003</b>	
RESEARCH EXPERIENCE	<b>Ohio State University</b> , Columbus, Ohio USA <i>Post Doctoral Researcher</i> ANITA Experiment Organized operations shifts, Integrated hardware before flight Wrote Cosmic Ray Airshower simulation Pierre Auger Observatory Performed mass composition and elongation rate studies AMBER Experiment Tested, calibrated and installed microwave components, wrote data acquisition and monitoring software <b>July, 2008 - present</b>	
	<b>University of Minnesota</b> , Minneapolis, Minnesota USA <i>Research Assistant</i> MINOS Experiment Non-Oscillation, Non-Accelerator Physics Working Group • Lead seasonal variation, moon/sun shadow and anti-matter analyses Detector Installation • Installed and calibrated Near Detector <b>March, 2004 - June, 2008</b>	
	<b>Ball State University</b> , Muncie, Indiana USA <i>Research Assistant</i> Aperture Photometry of Low Mass Red Stars • Performed observations at Lowell Observatory, Flagstaff, AZ <b>August, 2001 - May, 2003</b>	
TEACHING EXPERIENCE	<b>University of Minnesota</b> , Minneapolis, Minnesota USA <i>Teaching Assistant</i> Introductory Physics Labs (both algebra & calculus based) • Performed office hours, grading • Instructed recitation sessions, labs <b>September, 2003 - June, 2008</b>	
	<b>The Arts Place</b> , Portland, Indiana USA <i>Guitar Instructor</i> Instructed beginning through advanced students, from ages 5 - 50. <b>January, 2002 - May, 2003</b>	
PUBLICATIONS	<b>Primary Authorship</b>	

- “Observation of muon intensity variations by season with the MINOS Far Detector”, Adamson, P. *et al.*, The MINOS Collaboration, *Phys. Rev. D* (2010)
- “The Atmospheric charged kaon/pion ratio using seasonal variation methods”, Grashorn, E. W. *et al.*, *Astropart. Phys.* (2010)
- “Astroparticle Physics with the MINOS Far Detector” Grashorn, E.W., (For the MINOS Collaboration), Contributed to the 31st International Cosmic Ray Conference (ICRC 2009), Lodz, Poland, July 7-15, 2009
- “MINOS Observations of Shadowing in the Muon Flux Underground” Grashorn, E.W., (For the MINOS Collaboration), Contributed to the 31st International Cosmic Ray Conference (ICRC 2009), Lodz, Poland, July 7-15, 2009
- “An overview of the ANITA experiment”, Grashorn, E.W., (For the ANITA Collaboration), Contributed to the 44th Recontres de Moriond, La Thuile, Italy, Feb 1-8, 2009
- “An introduction to the AMBER experiment”, Grashorn, E.W., (For the AMBER Collaboration), Contributed to the 44th Recontres de Moriond, La Thuile, Italy, Feb 1-8, 2009
- “Sudden stratospheric warmings seen in MINOS deep underground muon data” Osprey, S. *et al.*, The MINOS Collaboration, *Geophys. Res. Lett.*, **36** L05809. (2009)
- “MINOS Observations of Shadowing in the Muon Flux Underground”, Grashorn, E.W., (For the MINOS Collaboration), Contributed to 30th International Cosmic Ray Conference (ICRC 2007), Merida, Yucatan, Mexico, July 3-11, 2007, hep-ex/07101616
- “Observation of Seasonal Variations with the MINOS Far Detector”, Grashorn, E.W., (For the MINOS Collaboration), Contributed to 30th International Cosmic Ray Conference (ICRC 2007), Merida, Yucatan, Mexico, July 3-11, 2007, hep-ex/07101617
- ”The MINOS Detectors”, Grashorn, E.W., (For the MINOS Collaboration) Contributed to the 29th International Cosmic Ray Conference (ICRC 2005), Pune, India, August 3-10, 2005, hep-ex/0507018

### Contributed Authorship

- “Neutrino and Antineutrino Inclusive Charged-current Cross Section Measurements with the MINOS Near Detector,” Adamson, P. *et al.*, The MINOS Collaboration, arXiv:0910.2201 [hep-ex]. (2010)
- “Search for muon-neutrino to electron-neutrino transitions in MINOS,” Adamson, P. *et al.*, The MINOS Collaboration, *Phys. Rev. Lett.*, **103** 261802. (2009)
- “The Fluorescence Detector of the Pierre Auger Observatory,” Abraham, J. A. *et al.*, The Pierre Auger Observatory, arXiv:0907.4282 [Unknown].
- “Search for Active Neutrino Disappearance Using Neutral-Current Interactions in the MINOS Long-Baseline Experiment” Adamson, P. *et al.*, The MINOS Collaboration, *Phys. Rev. Lett.*, **101** 221804. (2008)
- “Testing Lorentz Invariance and CPT Conservation with NuMI Neutrinos in the MINOS Near Detector” Adamson, P. *et al.*, The MINOS Collaboration, *Phys. Rev. Lett.*, **101** 151601. (2008)
- “The magnetized steel and scintillator calorimeters of the MINOS experiment” Michael, D.G. *et al.*, The MINOS Collaboration, *Nucl. Instr. & Meth.* **A596**, 190-228. (2008)
- “Measurement of Neutrino Oscillations with the MINOS Detectors in the NuMI Beam” Adamson, P. *et al.*, The MINOS Collaboration, *Phys. Rev. Lett.*, **101** 131802. (2008)
- “Study of muon neutrino disappearance using the Fermilab Main Injector neutrino beam” Adamson, P. *et al.*, The MINOS Collaboration, *Phys. Rev. D*, **77** 072002. (2008)
- “Measurement of neutrino velocity with the MINOS detectors and NuMI neutrino beam” Adamson, P. *et al.*, The MINOS Collaboration, *Phys. Rev. D*, **76**, 072005. (2007)
- “Measurement of the atmospheric muon charge ratio at TeV energies with MINOS” Adamson, P. *et al.*, The MINOS Collaboration, *Phys. Rev. D*, **76**, 052003. (2007)
- “Charge-Separated Atmospheric Neutrino-Induced Muons in the MINOS Far Detector” Adamson, P. *et al.*, The MINOS Collaboration, *Phys. Rev. D*, **75**, 092003. (2007)
- “Observation of muon neutrino disappearance with the MINOS detectors in the NuMI neutrino

beam” Michael, D.G. *et al.*, The MINOS Collaboration, *Phys. Rev. Lett.*, **97**, 191801. (2006)

“First Observations of Separated Atmospheric Muon Neutrino and Muon Anti-Neutrino Events in the MINOS Detector” Adamson, P. *et al.*, The MINOS Collaboration, *Phys. Rev. D*, **73**, 072002. (2006)

PAPERS IN  
PREPARATION

**Primary Authorship**

“Cosmic Ray Shadowing by the Moon and Sun in the MINOS Far Detector”, Adamson, P. *et al.*, The MINOS Collaboration, to be published in *Astropart. Phys.*

RECENT PUBLIC  
PRESENTATIONS

“An Overview of the ANITA Experiment” CCAPP Symposium, Columbus, OH, USA, October 12-14, 2009

“Astroparticle Physics with the MINOS Far Detector” 31st International Cosmic Ray Conference (ICRC 2009), Lodz, Poland, July 7-15, 2009

“An Introduction to the AMBER Experiment”, Grashorn, E.W., (For the AMBER Collaboration), poster at the 31st International Cosmic Ray Conference (ICRC 2009), Lodz, Poland, July 7-15, 2009

“MINOS Observations of Shadowing in the Muon Flux Underground” poster at the 31st International Cosmic Ray Conference (ICRC 2009), Lodz, Poland, July 7-15, 2009

“An Overview of the ANITA Experiment”, 44th Recontres de Moriond, La Thuile, Italy, February 1-8, 2009

“An Introduction to the AMBER Experiment”, poster at the 44th Recontres de Moriond, La Thuile, Italy, February 1-8, 2009

“Astroparticle Physics with the MINOS Far Detector” Final Oral Examination, University of Minnesota, Minneapolis, MN, USA June 16, 2008

“Cosmic Rays at MINOS: Physics in the Background” Cosmology Lunchtime Seminar, University of Minnesota, Minneapolis, MN, USA, April 14, 2008

“Cosmic Rays at MINOS: Physics in the Background” CCAPP Seminar, Ohio State University, Columbus OH, USA, March 3, 2008

“Cosmic Rays at MINOS: Physics in the Background” High Energy Seminar, University of Notre Dame, Notre Dame, IN, USA, February 26, 2008

“Observation of Seasonal Variations with the MINOS Far Detector”, 30th International Cosmic Ray Conference (ICRC 2007), Merida, Yucatan, Mexico, July 3-11, 2007

“MINOS Observations of Shadowing in the Muon Flux Underground”, poster at the 30th International Cosmic Ray Conference (ICRC 2007), Merida, Yucatan, Mexico, July 3-11, 2007

“Particle Astrophysics Potential with the MINOS Far Detector” Preliminary Oral Examination, University of Minnesota, Minneapolis, MN, USA, December 1, 2006

“A Cosmic Ray Source?” Thesis Presentation, University of Minnesota, Duluth, MN, USA August 16 2005.

“First Experiences with Beam Data in MINOS”, Grashorn, E.W., (For the MINOS Collaboration) poster the 29th International Cosmic Ray Conference (ICRC 2005), Pune, India, August 3-10, 2005

“The MINOS Detectors”, Grashorn, E.W., (For the MINOS Collaboration) poster the 29th International Cosmic Ray Conference (ICRC 2005), Pune, India, August 3-10, 2005

“Brief History of MINOS, Pt II” PHYS 1021, University of Minnesota, Duluth, December 2, 2004

“Brief History of MINOS, Pt I” PHYS 1021, University of Minnesota, Duluth, November 13, 2003

“Luminosity Classification of Low Mass Red Stars” Indiana Academy of Sciences Fall 2002 meeting, October 11, 2002

TECHNICAL  
EXPERTISE

**Computing:** C++, C, ROOT, Matlab, Mathematica, Perl, Fortran, Make, Unix shell scripts  
**Hardware:** Microwave RF systems  
**Monte Carlo:** Geant4, Corsika

**Other:** Unix/Linux, Windows, L<sup>A</sup>T<sub>E</sub>X, MS Excel, Word, Powerpoint.

AWARDS,  
AFFILIATIONS

R.D. and H.T. Miller Scholarship, Ball State University, 2002  
American Physical Society, Divisions of Particles and Fields; Astrophysics

LEADERSHIP  
EXPERIENCE

*V. P. for Internal Relations* UMN Council of Graduate Students   **January, 2007 - June, 2008**  
• Wrote official publications, organized Graduate School orientation  
*Officer* UMN School of Physics & Astronomy Graduate Student  
Organization, Grad Phi   **September, 2006 - June, 2008**  
• Organized mentoring program, social events

REFERENCES

**Dr. James J. Beatty:** Professor and Department Chair  
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**Dr. Alec T. Habig:** Thesis Supervisor, Associate Professor  
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**Dr. Marvin L. Marshak:** Thesis Supervisor, Professor  
University of Minnesota  
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116 Church St. SE  
Minneapolis MN 55455 USA  
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**Dr. Giles Barr:** University Lecturer  
Oxford University  
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Keble Road  
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**Dr. Maury C. Goodman:** Physicist  
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9700 S. Cass Ave.  
Argonne, IL 60439 USA  
*Voice:* 630.252.3646  
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