

MICHAEL ANTHONY BAUMER
mbaumer@stanford.edu

EDUCATION

Stanford University, Stanford, CA

Ph.D. student in Physics, Sept. 2013-present

Churchill College, University of Cambridge, Cambridge, UK

M. Phil., Physics, September 2013

University of Chicago, Chicago, IL

B.A., Physics and B.S., Mathematics, June 2012.

Cumulative GPA: 3.93/4.0

RESEARCH EXPERIENCE

Physics Department, Stanford University

Stanford, CA

Graduate Research Assistant, Dark Energy Survey/LSST

January 2014-present

- Analysis of non-linear galaxy clustering using Dark Energy Survey data.
- Studies of camera sensor systematics for upcoming Large Synoptic Survey Telescope.

Cavendish Laboratory, University of Cambridge

Cambridge, UK

Postgraduate Researcher, ATLAS Collaboration

October 2012-September 2013

- Analyzed data collected by the ATLAS detector at the Large Hadron Collider during 2012 to measure rare decays of the Z boson and calibrate mass measurements of the newly-discovered Higgs boson.
- Wrote Master's thesis on the rare decay of the Z boson to four leptons (August 2013).

Enrico Fermi Institute, University of Chicago

Chicago, IL and Geneva, Switzerland

Undergraduate Researcher, ATLAS Collaboration

December 2010-June 2012

- Analyzed ATLAS data to characterize Standard Model processes involving the production of a pair of vector bosons in the dilepton, dijet decay channel.
- Wrote and defended Honors thesis based on this analysis.

TEACHING EXPERIENCE

Department of Physics, Stanford University

Stanford, CA

Graduate Teaching Assistant

- PH41 Introductory E+M for Engineers (Winter 2014)
- PH50 Introduction to Observational Astronomy Lab (Fall 2015, 2016)

Department of Physics, University of Cambridge

Cambridge, UK

Undergraduate Supervisor

October 2012-February 2013

- Taught mathematical methods of physics to natural sciences undergraduates in groups of two as a teaching assistant for a second-year course.

Andrew Carnegie Elementary School

Chicago, IL

Science Club Outreach Coordinator

January 2010-June 2012

- Recruited other volunteers for twice-weekly after-school science club for sixty students from grades three to eight.
- Designed, prepared, and assisted students with science experiments in physics, biology, chemistry, and earth science.

HONORS AND AWARDS

National Science Foundation (NSF) Graduate Research Fellowship

2014-present

Gates Cambridge Scholar, Gates Cambridge Trust

2012-2013

Grainger Foundation Senior Fellowship, Chicago Physics Dept.

2011

Awarded by the Physics Fellowship Committee to a junior who is majoring in physics who shows particular interest and aptitude in the laboratory as well as outstanding proficiency in formal coursework. This award consists of a tuition scholarship for the senior year.

Phi Beta Kappa, Class of 2012

April 2011

Student Marshal, University of Chicago

March 2011

Selection as a Student Marshal is the highest honor awarded to students in the College, and is based on both an outstanding academic record and contributions to the campus and community.

Barry M. Goldwater Scholarship

March 2010

University Scholarship, University of Chicago

April 2008

SKILLS

PC/Mac/Linux. Data Analysis: C++/ROOT, Python, Matlab, IDL, Mathematica, Excel.
Web/Typesetting: LaTeX, HTML, and Javascript. Proficient in Spanish.

PUBLICATIONS

P. Marshall, ... M. Baumer, ... et al. SpaceWarps I – Crowdsourcing the discovery of gravitational lenses. Mon. Not. R. Astron. Soc. 455, 1171-90. (2016)

M. Baumer and A. Roodman. Intrinsic pixel size variation in an LSST prototype sensor. J. Inst. 10 C05024. (2015)

M. Baumer. "Studies of Z boson decays to four leptons in pp collisions at $\sqrt{s} = 8$ TeV with the ATLAS Detector at the LHC." Master's Thesis, University of Cambridge. August 2013.

M. Baumer. "Search for ZZ/WZ- \rightarrow llqq in pp Collisions at $\sqrt{s} = 7$ TeV with the ATLAS Detector." Honors B.A. Thesis, University of Chicago. May 2012.

M. Baumer. "Gravity Surface Wave Bifurcation in a Highly Turbulent Swirling Flow." Final Report, Chicago-Chile Materials Collaboration. September 2010.
http://jfi.uchicago.edu/~tten/Chile/s2010/baumer_tc_report.pdf

PRESENTATIONS

M. Baumer and A. Roodman. "Intrinsic pixel size variation in an LSST prototype sensor" Precision Astronomy with Fully Depleted CCDs, Brookhaven National Laboratory, December 2014.

M. Baumer. "Studies of Z Boson Production at the LHC using the ATLAS Detector." Presentation, Midstates Consortium for Math and Science Undergraduate Research Symposium, University of Chicago, November 5, 2011.

M. Baumer. "Taylor-Couette Flow." Presentation, Universidad de Chile, Santiago, Chile. September 3, 2010.

M. Baumer. "Anode Readouts." Presentation, Large-Area Photodetector Collaboration Meeting, Argonne National Laboratory, October 15, 2009.
<https://twindico.hep.anl.gov/indico/getFile.py/access?contribId=18&sessionId=5&resId=0&materialId=slides&confId=35>