

Maria Theresa Patterson

Personal Information

School Address: Department of Astronomy
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Education

New Mexico State University Las Cruces, NM
Ph.D., Astronomy expected June 2012

The University of Chicago Chicago, IL
B.A. with Honors, Physics and Astrophysics with Department Honors June 2007
“Direct Cherenkov Detection with VERITAS”, Advisor: Simon Swordy
GPA: 3.47/4.00

Appointments & Activities

Research Assistant August 2007 - present
Advisor: Rene Walterbos New Mexico State University
Reducing spectroscopic data acquired with Apache Point Observatory's ARC-3.5m telescope and Dual Imaging Spectrograph using IRAF software to study species abundances of several planetary nebulae in the Milky Way Galaxy
Producing rotation curves of galaxy NGC891 using a multi-slit spectroscopic technique to investigate diffuse ionized gas halo kinematics

Teaching Assistant August 2007 - present
Advisors: Nicole Vogt, Kurt Anderson New Mexico State University
Responsible for running a laboratory component to an undergraduate Astronomy course, grading course material, meeting with students during office hours, and operating campus observatory telescopes

Undergraduate Research Assistant Summer 2005 – May 2007
Advisor: Simon Swordy The University of Chicago
Assembled and tested equipment on site at the Whipple Observatory in Amado, AZ for the VERITAS gamma ray telescope array
Analyzed simulations of telescope data to improve calibration techniques
Modeled cosmic ray events to help distinguish between direct Cherenkov radiation and Cherenkov radiation from associated atmospheric air showers
Optimized possible future arrangements of the VERITAS telescope array in order to achieve a configuration with an effective aperture for direct Cherenkov radiation detection over ten times larger than the largest cosmic ray detector

Awards and Grants

New Mexico Higher Education Department Fellowship, 2008-
NMSU Graduate Assistant Award, 2008-2009
“Galaxy Evolution Through the Neutral Hydrogen Window” Conference Travel Grant, 2008
University of Chicago Dean's List, 2003-2004, 2005-2006, 2006-2007
Illinois Space Grant, 2006
Helen Myers-McLoraine Scholarship, 2004-07
Robert C. Byrd Scholarship, 2003-2007

Meetings

January 2008: American Astronomical Society meeting, “Multi-long-slit spectroscopy for kinematic studies. I. Implementation and demonstration”
R. Waltherbos, J. Choi, S. Cisneros, M. Patterson, C. Wu

American Astronomical Society meeting, “Multi-long-slit spectroscopy for kinematic studies. II. Initial results for the edge-on galaxies NGC891 and NGC4244”
J. Choi, S. Cisneros, C. Wu, M. Patterson, R. Waltherbos

Extracurriculars

Secretary

Astronomy Graduate Student Organization
Responsible for re-chartering organization

May 2008 – present
New Mexico State University

Planning Committee Member

Class of 2007 First Year Reunion Committee
Planned class reunion party

August 2007 – June 2008
The University of Chicago Alumnae Office

Outreached to classmates to raise funds for class gift and update alumnae contact information

Treasurer

Samahan Filipino Cultural Association

Maintained accurate account records, prepared budgets, and processed reimbursements

Prepared annual allocations proposal for Student Government Fund Committee approval

August 2005 – May 2007
The University of Chicago

Research Interests

Galaxy formation and evolution, Active Galactic Nuclei, Supernova remnants