

Joseph Masiero

CONTACT INFORMATION	Jet Propulsion Lab 4800 Oak Grove Dr 264-767 Pasadena, CA 91106 USA	Cell: (808) 284-4184 E-mail: masiero@ifa.hawaii.edu WWW: www.ifa.hawaii.edu/~masiero
RESEARCH INTERESTS	Polarimetry Instrumentation, Asteroid Albedos and Diameters (Main Belt and NEA), Education & Public Outreach	
EDUCATION	University of Hawaii at Manoa , Honolulu, HI USA	
	Ph.D., Institute for Astronomy, September 2009	
	<ul style="list-style-type: none">• Thesis Topic: <i>“Using rotation and polarization to probe the composition and surface properties of main belt asteroids”</i>• Advisor: Dr. Robert Jedicke	
	M.S., Institute for Astronomy, December 2006	
	<ul style="list-style-type: none">• GPA 3.87	
	The Pennsylvania State University , State College, PA USA	
	B.S., Astronomy & Astrophysics, June 2004	
	<ul style="list-style-type: none">• <i>Cum Laude</i> with Honors in Astronomy & Astrophysics• GPA 3.82 - Overall• GPA 3.95 - In Major• Minors in Physics and Math	
EMPLOYMENT		
	NASA Postdoctoral Fellow, JPL	Oct 2009 to present
	Research Assistant, Institute for Astronomy, UH	May 2005 to Sept 2009
	Teaching Assistant, Dept of Physics and Astronomy, UH	Aug 2004 to May 2005
	Research Assistant, Dept of Astronomy & Astrophysics, PSU	Jan 2001 to Aug 2004
	“Mission to Mars” Instructor, Action Potential Science Experience, PSU	Jul 2004
	Teaching Assistant, Duke Talent Identification Program at the Pisgah Astronomical Research Institute, Rosman, NC	Jun 2004
	Teaching Assistant, Duke Talent Identification Program at the Pisgah Astronomical Research Institute, Rosman, NC	Jun 2003
	Differential Image Motion Monitor Operator, Hobby-Eberly Telescope, McDonald Observatory, TX	Jul 2001
TEACHING		
	Inquiry-based photometer lab for Electro-Optics Class, Maui Community College	Mar 3 & 5 2008
	Teaching Assistant, Dept of Physics and Astronomy, UH	Aug 2004 to May 2005

“Mission to Mars” Instructor, Action Potential
Science Experience, PSU **Jul 2004**

Teaching Assistant, Duke Talent Identification Program at the
Pisgah Astronomical Research Institute, Rosman, NC **Jun 2004**

Teaching Assistant, Duke Talent Identification Program at the
Pisgah Astronomical Research Institute, Rosman, NC **Jun 2003**

TEACHING
WORKSHOPS

CfAO Professional Development Program
(Inquiry Method of Teaching Science) **03/1-7/07**

NASA Center for Astronomy Education Workshop **06/20-23/05**

RESEARCH
WORKSHOPS

JPL’s Planetary Science Summer School, 2007
A **New Frontiers**-class mission design for comet sample return:
The Wirtanen Analysis and Surface Probe (WASP) **07/23-27/07**

PUBLICATIONS

Refereed Publications

- Price, A.; **Masiero, J.**; et al. “*Polarimetry and the Long Awaited Superoutburst of BZ Uma*”. PASP in press, arXiv:0909.4024.
- **Masiero, J.**; Hartzell, C.; Scheeres, D.J. “*The effect of the dust size distribution on asteroid polarization*”. AJ in press, arXiv:0909.3827.
- **Masiero, J.**; Jedicke, R.; Durech, J.; Gwyn, S.; Denneau, L.; Larsen, J. “*The Thousand Asteroid Light Curve Survey*”. Icarus in press, arXiv:0906.3339.
- Richter, Philipp; Charlton, Jane C.; Fangano, Alessio P. M.; Ben Bekhti, Nadya; **Masiero, Joseph R.** “*A population of weak metal-line absorbers surrounding the Milky Way*”. 2009, ApJ, 695, 1613.
- **Masiero, J.**; Cellino, A. “*Polarization of asteroid (387) Aquitania: the newest member of a class of large inversion angle asteroids*”. 2009, Icarus, 199, 333.
- Milutinovic, N.; Misawa, T.; Lynch, R. S.; **Masiero, J. R.**; Palma, C.; Charlton, J. C.; Kirkman, D.; Bockenhauer, S.; Tytler, D. “*A Catalog of Absorption Lines in Eight HST/STIS E230M $1.0 < z < 1.7$ Quasar Spectra*”. 2007, MNRAS, 382, 1094.
- **Masiero, J.**; Hodapp, K.; Harrington, D.; Lin, H. “*Commissioning of the Dual-Beam Imaging Polarimeter for the UH 88-inch telescope*”. 2007, PASP, 119, 1126.
- Maybhate, Aparna; **Masiero, Joseph**; Hibbard, J. E.; Charlton, Jane C.; Palma, Christopher; Knierman, Karen A.; and English, Jayanne. “*An HI Threshold for Star Cluster Formation in Tidal Debris*”. 2007, MNRAS, 381, 59.
- Kubica, J.; Denneau, L.; Grav, T.; Heasley, J.; Jedicke, R.; **Masiero, J.**; Milani, A.; Moore, A.; Tholen, D.; Wainscoat, R.J. “*Efficient intra- and inter-night linking of asteroid detections using kd-trees*”. 2007, Icarus, 189, 151.
- Milutinovic, Nikola; Rigby, Jane R.; **Masiero, Joseph R.**; Lynch, Ryan S.; Palma, Chris; and Charlton, Jane C. “*The Nature of Weak MgII Absorbing Structures*”. 2006, ApJ, 641, 190.
- Narayanan, Anand; Charlton, Jane C.; **Masiero, Joe R.**; and Lynch, Ryan. “*A Survey of Analogs to Weak MgII Absorbers in the Present*”. 2005, ApJ, 632, 92.
- **Masiero, Joseph R.**; Charlton, Jane C.; Ding, J.; Churchill, Christopher W.; and Kacprzak, G. “*Models of Five Absorption Line Systems Along the Line of Sight Toward PG 0117+213*”. 2005, ApJ, 623, 57.
- Ganguly, Rajib; **Masiero, Joseph**; Charlton, Jane C.; and Sembach, Ken R. “*An Intrinsic Absorption Complex Toward RXJ1230.8+0115: Geometry and Photoionization Conditions*”. 2003, ApJ, 598, 922-934.

Conference Proceedings and non-refereed publications

- Clemens, Dan; Andersson, B. -G.; ... **Masiero, Joseph**; ... “*O/IR Polarimetry for the 2010 Decade (GAN): Science at the Edge, Sharp Tools for All*”. 2009, arXiv, 0902.4217.
- Clemens, Dan; Andersson, B. -G.; ... **Masiero, Joseph**; ... “*O/IR Polarimetry for the 2010 Decade (PSF): Science at the Edge, Sharp Tools for All*”. 2009, arXiv, 0902.4220.
- Hines, Dean C.; Packham, Christopher C.; ... **Masiero, Joseph**; ... “*O/IR Polarimetry for the 2010 Decade (CGT): Science at the Edge, Sharp Tools for All*”. 2009, arXiv, 0902.4224.
- Lazarian, Alex; Clemens, Dan; ... **Masiero, Joseph**; ... “*Understanding Polarized Foreground from Dust: Towards Reliable Measurements of CMB Polarization*”. 2009, arXiv, 0902.4226.
- **Masiero, J.**; Hodapp, K.; Harrington, D.; Lin, H. “*Extended Commissioning and Calibration of the Dual-Beam Imaging Polarimeter*”. 2008, arXiv, 0809.4313.
- **Masiero, J.** “*A New Instrument for the UH 2.2-meter Telescope*”. 2007, IfA Newsletter, 25, 1.
- Stubbs, C. W.; Slater, S. K.; Brown, Y. J.; Sherman, D.; Smith, R. C.; Suntzeff, N.; Saha, A.; Tonry, J. L.; **Masiero, J. R.**; Rodney, S. “*Preliminary Results from Detector-Based Throughput Calibration of the CTIO Mosaic Imager and Blanco Telescope Using a Tunable Laser*”. 2007, ASPC, 364, 373.
- **Masiero, Joseph R.**; Jedicke, Robert; Price, Paul A.; Kubica, Jeremy; Heasley, James. “*The MegaCam g' Asteroid Survey*”. 2006, 699 Final Report.
- Slater, S.; Stubbs, C. W.; Tonry, J. L.; **Masiero, J. R.**; Smith, R. C. “*Calibration techniques for next-generation astronomical systems*”. 2006, SPIE, 6269E, 66.
- Kubica, J.; **Masiero, J.**; Moore, A.; Jedicke, R.; and Connolly, A. “*Variable KD-Tree Algorithms for Spatial Pattern Search and Discovery*”. 2005, Advances in Neural Information Processing Systems, 433.
- Churchill, Christopher W.; Charlton, Jane C.; and **Masiero, Joseph R.** “*Mapping Metal-Enriched High Velocity Clouds to Very Low HI Column Densities.*” 2002, ASPC, 254, 236.

RESEARCH TALKS

- **05/08/09**: IfA Coffee Talk, “*Dust in the Wind*”
- **03/20/09**: Southwest Research Institute Colloquium, “*The Thousand Asteroid Light Curve Survey*”
- **11/21/08**: Canada-France-Hawaii Telescope Seminar, “*The Thousand Asteroid Light Curve Survey*”
- **07/15/08**: Asteroids, Comets, Meteors 2008, “*Results from the Thousand Asteroid Light Curve Survey*”
- **07/07/08**: Astronomical Polarimetry 2008, “*The Dual-Beam Imaging Polarimeter: A New Instrument for the UH 2.2 m Telescope*”
- **09/14/07**: IfA Coffee Talk, “*The Dual-Beam Imaging Polarimeter*”
- **09/05/07**: Grad Student/Post-doc Seminar, “*The Dual-Beam Imaging Polarimeter*”
- **06/29/07**: VII Workshop on Catastrophic Disruption in the Solar System, “*The Thousand Asteroid Light Curve Survey. Preliminary Results*”
- **04/12/07**: Thesis Proposal, “*Using Rotation and Polarization to Probe the Composition and Surface Properties of Main Belt Asteroids*”
- **12/14/06**: Lunchtalk presentation to the US Naval Academy Physics and Astronomy Dept, “*The Thousand Asteroid Light Curve Survey*”
- **11/02/06**: Pan-STARRS Moving Object Processing System Critical Design Review: “*Trailed Object Fitting*”
- **10/02/06**: 699 Research Presentation to the IfA, “*The Pan-STARRS Flat-Field Monitor Telescope*”
- **08/18/06**: Center for Star and Planet Formation Research Talk, “*Main Belt Asteroids: Rotation and Polarization*”
- **02/24/06**: 699 Research Presentation to the IfA, “*The MegaCam g' Asteroid Survey*”

PUBLIC TALKS

- **02/12-13/08**: Journey Through the Universe, Waiakea Intermediate; Hilo, HI: “*Formation*”

of the Solar System"

- **06/07/08**: Habilitat Rehab Program; Kaneohe, HI: "*Tour of the Solar System*"
- **02/07/08**: Journey Through the Universe, Kapiolani Elementary; Hilo, HI: "*Energy in the Universe*"
- **12/19/07**: Lincoln Elementary School 5th grade; Roxbury, NJ: "*Tour of the Solar System*"
- **08/04/07**: Girl Scout Science Camp; Camp Erdman, HI: "*Aliens in the Solar System?*"
- **01/23/07**: Journey Through the Universe, Waiakea Elementary; Hilo, HI: "*Tour of the Solar System*"
- **12/19/06**: Lincoln Elementary School 5th grade; Roxbury, NJ: "*Tour of the Solar System*"
- **06/17/06**: Habilitat Rehab Program; Kaneohe, HI: "*Tour of the Solar System*"
- **12/20/05**: Lincoln Elementary School 5th grade; Roxbury, NJ: "*Tour of the Solar System*"

CONFERENCE
POSTERS

- AAS Division of Planetary Sciences Meeting, 2009: "*Solar System Science with WISE*" (Future Mission Science Objectives).
- AAS Division of Planetary Sciences Meeting, 2007: "*Orbits and Periods: Results from the Thousand Asteroid Light Curve Survey*" (Asteroid rotation, Observed Population Statistics).
- American Astronomical Society Winter Meeting, 2006: "*Pan-STARRS: Main Belt Sky-Plane Density Determination, and Trailed Object Identification*" (Main Belt Asteroid Sky Plane Density, Image Processing Pipeline Efficiency, Trailed Object Identification Efficiency).
- American Astronomical Society Winter Meeting, 2004: "*Super Star Clusters and their Association with the Radio and Optical Tidal Tails of Interacting Galaxies*" (Interacting Galaxies: Optical-IR comparisons).
- American Astronomical Society Winter Meeting, 2003: "*The Recipe for the Extragalactic Soup*" (Quasar Absorption Lines: Intervening System Modeling).
- American Astronomical Society Winter Meeting, 2002: "*The Recipe for a High Velocity Cloud*" (Quasar Absorption Lines: Milky Way High Velocity Cloud Modeling).

OUTREACH

IfA Graduate Education and Public Outreach Committee (GEPOC)

- Volunteer **2004-2009**
- Founder/Organizer **2004-2008**
- see www.ifa.hawaii.edu/gepoc for more information on GEPOC

IfA Deep Impact Outreach Team

- Oahu Coordinator **2005**

Penn State Astrofest

- Volunteer **2002-2005**
- Volunteer Coordinator **2003**

HONORS AND
AWARDS

- NASA Postdoctoral Program Fellowship **2009 - present**
- Deans List **Fall 2000 - 2009**
- Graduated with Distinction and Honors (PSU) **2004**
- Braddock Scholar (Eberly College of Science, PSU, Full Scholarship) **2000 - 2004**
- Schreyer Honors College Scholar **2000 - 2004**

MEMBERSHIP

Committees:

- Qualifying Exam Committee (elected) **Fall 2008**
- IfA Time Allocation Committee (elected) **2008 Semester 1**
- Colloquium Committee (appointed) **1/2008 - 9/2009**
- Graduate Student Representative to the Faculty (elected) **10/2007 - 10/2008**

- IfA Outreach Committee (as head of GEPOC) **2005 - 2008**

Professional Societies:

- American Astronomical Society **from 2001**
- National Society of Collegiate Scholars **from 2001**
- Golden Key Honor Society **from 2002**
- Phi Beta Kappa **from 2005**
- AAS Division of Planetary Science **from 2007**

ACTIVITIES

- Bagpiper with the Celtic Pipes and Drums of Hawaii **01/2008 - 09/2009**
- Wisdom Factors International (Non-Profit),
Director & Secretary **08/2007 - 09/2009**
- River of Life Mission, Volunteer **02/2007 - 09/2009**
- University of Hawaii Graduate Student Organization,
Executive Council - At-Large **05/2006 - 05/2007**
- St. Pius X Parish Council **2005 - 2009**
- Penn State Soaring Club, President **12/2002 - 04/2004**
- No Refund Theatre's "Working", Production Manager **Fall 2003**