

Joseph Masiero

Curriculum Vitae

CONTACT INFORMATION Caltech/IPAC
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Pasadena, CA 91125 USA

RESEARCH INTERESTS Asteroid physical properties
Asteroid families
Numerical simulations of Solar system evolution
Imaging polarimetry
Thermal models of Solar system objects
Polarimetric instrumentation and characterization
Education & public outreach

EDUCATION **University of Hawaii at Manoa**, Honolulu, HI USA

Ph.D., Institute for Astronomy, September 2009

- Thesis Topic: *“Using rotation and polarization to probe the composition and surface properties of main belt asteroids”*
- Advisor: Dr. Robert Jedicke

M.S., Institute for Astronomy, December 2006

The Pennsylvania State University, University Park, PA USA

B.S., Astronomy & Astrophysics, June 2004

EMPLOYMENT

Solar System Scientist
Caltech/IPAC **Oct 2020 to present**

Deputy Principal Investigator
NEOWISE **Jun 2017 to present**

Group Supervisor
Small Bodies of the Solar System Group **Mar 2019 to Sept 2020**

Scientist
Jet Propulsion Laboratory **Oct 2012 to Sept 2020**

NASA Postdoctoral Fellow
Jet Propulsion Laboratory **Oct 2009 to Sept 2012**

Research Assistant
Institute for Astronomy
University of Hawaii **May 2005 to Sept 2009**

Teaching Assistant
Dept of Physics and Astronomy
University of Hawaii **Aug 2004 to May 2005**

Research Assistant
Dept of Astronomy & Astrophysics
Pennsylvania State University **Jan 2001 to Aug 2004**

MISSION TEAM
MEMBERSHIPS

NEO Surveyor Mission Investigation Team Member
NEOWISE Science Team Member

ADVISING

Dave Milewski, NASA ASTAR mentor, Thesis Committee Member	Jan 2018 - present
Denise Hung, PhD thesis committee member	Summer 2018-present
Jennifer Bragg, JPL Undergraduate Internship mentor	Summer 2020
Patrice Smith, JPL Undergraduate Internship mentor	Summer 2019
Nathan Blair, JPL Undergraduate Internship mentor	Summer 2019
Andy Lopez Oquendo, JPL Graduate Internship co-mentor	Summer 2019
Ian Diaz-Vachier, JPL Undergraduate Internship co-mentor	Summer 2019
Lean Teodoro, JPL Undergraduate Internship mentor	Summer 2018
Nathan Blair, JPL Undergraduate Internship mentor	Summer 2018
Hannah Reutershan, JPL Undergraduate Internship co-mentor	Summer 2018
Stephanie Spear, JPL Undergraduate Internship co-mentor	Summer 2018
Erin Redwing, JPL Undergraduate Internship mentor	Summer 2017
Yasuhiro Hasegawa, JPL Postdoc co-mentor	Fall 2015-Fall 2017
Mario Cabrera, JPL Undergraduate Internship mentor	Summer 2013-Spring 2014
Greta Cukrov, Undergraduate Internship co-mentor	Summer 2013
Elizabeth Clyne, Undergraduate Internship co-mentor	Spring 2013
Carrie Nugent, Graduate Internship co-mentor	Summer 2012-Fall 2012
Mario Cabrera, CAMPARE Undergraduate Internship co-mentor	Summer 2012
Wenli Mo, Undergraduate Internship co-mentor	Summer 2011-Spring 2012
Jessica Watkins, Graduate Internship co-mentor	Summer 2011
Emma Hand, Undergraduate Internship co-mentor	Spring 2011
Erin Blauvelt, Undergraduate Internship co-mentor	Spring 2011
Emily DeBaun, Undergraduate Internship co-mentor	Fall 2010
Ashlee Wilkins, Undergraduate Internship co-mentor	Summer 2010
Dillon Elsbury, High School Internship co-mentor	Summer 2010
Tommy Gautier, High School Internship co-mentor	Summer 2010
Stephanie Gomillion, Undergraduate Internship co-mentor	Spring 2010

SUCCESSFUL
GRANTS AND
PROPOSALS

Co-author on the proposal for the 2015 Discovery-class mission NEOCam, the Near-Earth Object Camera. NEOCam was selected to proceed to Extended Phase-A Concept Study.

Co-author on the proposal to restart the NEOWISE space-based near-Earth object discovery and characterization survey. Mission was funded to continue survey operations through 2020.

Science PI for 2012 NASA Planetary Geology and Geophysics proposal: “Studying the Origin and Evolution of Main Belt Asteroid Families” - Funded at \$150K over two years.

Co-author on the proposal for the 2010 Discovery-class mission NEOCam, the Near-Earth Object Camera. NEOCam was awarded technology development funding as a result of this proposal.

HONORS AND
AWARDS

- Asteroid 8255 Masiero (1981 EZ18) named in honor
- JPL Lew Allen Award for significant accomplishment in research: **2020**
- JPL Voyager Award: NEOWISE and NEOCam scientific analysis **2018**
- 6 JPL Team Awards **2016-2019**
- 2 NASA Group Achievement Awards **2014-2016**
- NASA Early Career Public Achievement Medal **2016**
- JPL Voyager Award: NEOWISE scientific analysis **2015**

- JPL Science Division Mariner Award: NEOWISE restart 2014
- Honorary Officer, NASA's First Planetary Defense Squadron (Provisional) 2011
- NASA Postdoctoral Program Fellowship 2009 - 2012
- Graduated with Distinction and Honors (PSU) 2004
- Penn State Eberly College of Science Braddock Scholar 2000 - 2004
- Penn State Schreyer Honors College Scholar 2000 - 2004

PUBLICATIONS

- Co-author on over 450 Minor Planet Electronic Circulars (MPECs) and International Astronomical Union Circulars (IAUCs) describing observations of NEOs, comets, and other interesting small Solar system bodies.
- **Masiero, J.**; Davidsson, B.; Liu, Y.; et al. “*Volatility of Sodium in Carbonaceous Chondrites at Temperatures Consistent with Low-perihelion Asteroids*”, 2021, PSJ, 2, 165.
- **Masiero, J.**; Mainzer, A.K.; Bauer, J.M.; et al., “*Asteroid Diameters and Albedos from NEOWISE Reactivation Mission Years Six and Seven*”, 2021, PSJ, 2, 162.
- **Masiero, J.**; Wright, E.L.; Mainzer, A.K., “*Uncertainties on Asteroid Albedos Determined by Thermal Modeling*”, 2021, PSJ, 2, 32.
- Yang, B.; Hanus, J.; ...; **Masiero, J.**; et al. “*Physical and Dynamical Characterization of the Euphrosyne Asteroid Family*”, 2020, A&A, 643, 38.
- **Masiero, J.**; Smith, P.; Teodoro, L.; et al. “*Physical Properties of 299 NEOs Manually Recovered in Over Five Years of NEOWISE Survey Data*”, 2020, PSJ, 1, 9.
- **Masiero, J.**; Mainzer, A.; Bauer, J.; et al. “*Asteroid Diameters and Albedos from NEOWISE Reactivation Mission Years Four and Five*”, 2020, PSJ, 1, 5.
- Williamson, B.; Sonnett, S.; ...; **Masiero, J.**; et al., “*Rotational Properties of Three Hilda Asteroids*”, 2020, Minor Planet Bulliten, 47, 66.
- **Masiero, J.**; Wright, E.L.; Mainzer, A.K., “*Thermophysical modeling of NEOWISE observations of DESTINY+ targets Phaethon and 2005 UD*”, 2019, AJ, 158, 97.
- Reddy, V.; Kelley, M.S.; ...; **Masiero, J.**; et al., “*Near-Earth asteroid 2012 TC₄ observing campaign: Results from a global planetary defense exercise*”, 2019, Icarus, 326, 133.
- Cutri, R.M.; **Masiero, J.**; Sonnett, S.; Mainzer, A. “*Mid-infrared Lightcurves of (523806) 2002 WW17*”, 2019, Minor Planet Bulletin, 46, 216.
- Mainzer, A.; Bauer, J.; ...; **Masiero, J.**; et al., “*NEOWISE Diameters and Albedos V2.0*”. 2019, NASA Planetary Data System, urn:nasa:pds:neowise_diameters_albedos::2.0.
- **Masiero, J.**; Redwing, E.; Mainzer, A.; et al., “*Small and Nearby NEOs Observed by NEOWISE During the First Three Years of Survey: Physical Properties*”, 2018, AJ, 156, 60.
- **Masiero, J.**; Mainzer, A.; Wright, E.L., “*A Family-Based Method of Quantifying NEOWISE Diameter Errors*”, 2018, AJ, 156, 62.
- Rosser, J.; Bauer, J.; Mainzer, A.; Kramer, E.; **Masiero, J.**; et al., “*Behavioral Characteristics and CO+CO₂ Production Rates of Halley-Type Comets Observed by NEOWISE*”, 2018, AJ, 155, 164.
- Boyajian, T.; ...; **Masiero, J.**; et al., “*The First Post-Kepler Brightness Dips of KIC 8462852*”, 2018, ApJL, 853, 8.
- Aljbaae, S.; Carruba, V.; **Masiero, J.**; Domingos, R.; Huaman, M., “*The Maria asteroid family*”, 2017, MNRAS, 471, 4820.
- **Masiero, J.**, “*Palomar Optical Spectrum of Hyperbolic Near-Earth Object A/2017 U1*”. 2017, arXiv:1710.09977.
- **Masiero, J.**; Nugent, C.; Mainzer, A.; et al., “*NEOWISE Reactivation Mission Year Three: Asteroid Diameters and Albedos*”. 2017, AJ, 154, 168.
- Bauer, J.; Grav, T.; ...; **Masiero, J.**; et al., “*Debiasing the NEOWISE Cryogenic Mission Comet Populations*”. 2017, AJ, 154, 53.
- Aljbaae, S.; Carruba, V.; **Masiero, J.**; Domingos, R.; Huaman, H., “*The Rafita Asteroid Family*”. 2017, MNRAS, 467, 1016.
- Kramer, E.; Bauer, J.; ...; **Masiero, J.**; et al., “*The Perihelion Emission of Comet C/2010 L5 (WISE)*”. 2017, ApJ, 838, 58.
- Nugent, C.; Mainzer, A.; **Masiero, J.**; Wright, E.L.; Bauer, J.; et al., “*Observed asteroid surface area in the thermal infrared*”. 2017, AJ, 153, 90.
- Nugent, C.; Mainzer, A.; Bauer, J.; Cutri, R.M.; Kramer, E.A.; Grav, T.; **Masiero, J.**; et

- al., “*NEOWISE Reactivation Mission Year Two: Asteroid Diameters and Albedos*”. 2016, AJ, 152, 63.
- Wright, E.L.; Mainzer, A.; **Masiero, J.**; Grav, T.; Bauer, J., “*The Albedo Distribution of Near Earth Asteroids*”. 2016, AJ, 152, 79.
 - Mainzer, A.; Bauer, J.; ...; **Masiero, J.**; et al., “*NEOWISE Diameters and Albedos V1.0*”. 2016, NASA Planetary Data System, EAR-A-COMPIL-5-NEOWISEDIAM-V1.0.
 - Hasegawa, Y.; Turner, N.J.; **Masiero, J.**; et al., “*Forming Chondrites in a Solar Nebula with Magnetically Induced Turbulence*”. 2016, ApJL, 802, 12.
 - Kaluna, H.; **Masiero, J.**; Meech, K.; “*Space weathering trends among carbonaceous asteroids*”. 2016, Icaurs, 264, 62.
 - Nugent, C.; Mainzer, A.; **Masiero, J.**; Bauer, J.; Cutri, R.M.; et al.; “*NEOWISE Reactivation Mission Year One: Preliminary Asteroid Diameters and Albedos*”. 2015, ApJ, 814, 117.
 - Bauer, J.M.; Stevenson, R.; Kramer, E.; Mainzer, A.; Grav, T.; **Masiero, J.**; et al.; “*The NEOWISE-discovered comet population and the CO+CO₂ production rates*”. 2015, ApJ, 814, 85.
 - **Masiero, J.**; Carruba, V.; Mainzer, A.; Bauer, J.M.; Nugent, C.; “*The Euphrosyne Family’s Contribution to the Low Albedo Near-Earth Asteroids*”. 2015, ApJ, 809, 179.
 - Grav, T.; Bauer, J.M.; Mainzer, A.K.; **Masiero, J.**; Nugent, C.R.; Cutri, R.M.; Sonnett, S.; Kramer, E.; “*NEOWISE: Observations of the Irregular Satellites of Jupiter and Saturn*”. 2015, ApJ, 809, 3.
 - Buratti, B.; Hicks, M.D.; Dalba, P.A.; Chu, D.; O’Neill, A.; Hillier, J.K.; **Masiero, J.**; Banholzer, S.; Rhoades, H.; “*Photometry of Pluto 2008-2014: Evidence of Ongoing Seasonal Volatile Transport and Activity*”. 2015, ApJL, 804, 6.
 - Mainzer, A.; Grav, T.; Bauer, J.; Conrow, T.; Cutri, R.M.; Dailey, J.; Fowler, J.; Giorgini, J.; Jarrett, T.; **Masiero, J.**; et al.; “*Survey Simulations of a New Near-Earth Asteroid Detection System*”. 2015, AJ, 149,172.
 - **Masiero, J.R.**; DeMeo, F.; Kasuga, T.; Parker, A.H.; “*Asteroid Family Physical Properties*”. 2015, Asteroids IV (eds. P. Michel, F. DeMeo, W.F. Bottke), University of Arizona Press, 323.
 - Sonnett, S.; Mainzer, A.; Grav, T.; **Masiero, J.**; Bauer, J.; “*Binary Candidates in the Jovian Trojan and Hilda populations from NEOWISE lightcurves*”. 2015, ApJ, 799, 191.
 - Mainzer, A.; Bauer, J.; Cutri, R.; Grav, T.; **Masiero, J.**; et al.; “*Initial performance of the NEOWISE Reactivation Mission*”. 2014, ApJ, 792, 30.
 - **Masiero, J.R.**; Grav, T.; Mainzer, A.K.; Nugent, C.R.; Bauer, J.M; Stevenson, R.; Sonnett, S.; “*Main-belt Asteroids with WISE/NEOWISE: Near-Infrared Albedos*”. 2014, ApJ, 791, 121.
 - Stevenson, R.; Bauer, J.; Kramer, E.; Grav, T.; Mainzer, A.; & **Masiero, J.**; “*Lingering grains of truth around comet 17P/Holmes*”. 2014, ApJ, 787, 116.
 - Mainzer, A.; Bauer, J.; Grav, T.; **Masiero, J.**; et al.; “*The Population of Tiny Near-Earth Objects Observed by NEOWISE*”. 2014, ApJ, 784, 110.
 - Ganguly, R.; Lynch, R.S.; Charlton, J.C.; ...; **Masiero, J.R.**; et al.; “*A census of quasar-intrinsic absorption in the Hubble Space Telescope archive: systems from high-resolution echelle spectra*”. 2013, MNRAS, 435, 1233.
 - Bauer, J.M.; Grav, T.; Blauvelt, E.; Mainzer, A.K.; **Masiero, J.R.**; Stevenson, R.; et al.; “*Centaur and Scattered Disk Objects in the Thermal Infrared: Analysis of WISE/NEOWISE Observations*”. 2013, ApJ, 773, 22.
 - **Masiero, J.R.**; Mainzer, A.K.; Bauer, J.M; Grav, T.; Nugent, C.R.; Stevenson, R.; “*Asteroid Family Identification Using the Hierarchical Clustering Method and WISE/NEOWISE Physical Properties*”. 2013, ApJ, 770, 7.
 - Herenz, P.; Richter, P.; Charlton, J.C.; **Masiero, J.R.**; “*The Milky Way halo as a QSO absorption-line system. New results from an HST/STIS absorption-line catalogue of Galactic high-velocity clouds*”. 2013, A&A, 550, A87.
 - Mainzer, A.; Grav, T.; **Masiero, J.R.**; Bauer, J.; et al.; “*Physical Parameters of Asteroids Estimated from the WISE 3 Band Data and NEOWISE Post-Cryogenic Survey*”. 2012, ApJL, 706, 12.
 - Stevenson, R.; Kramer, E.A.; Bauer, J.M; **Masiero, J.R.**; Mainzer A.; “*Characterization*

- of Active Main Belt Object P/2012 F5 (Gibbs): A Possible Impacted Asteroid". 2012, ApJ, 759, 142.
- **Masiero, J.R.**; Mainzer A.; Grav, T.; Bauer, J.; Nugent, C.; Cabrera, M.S.; "Preliminary Analysis of WISE/NEOWISE 3-Band Cryogenic and Post-Cryogenic Observations of Main Belt Asteroids". 2012, ApJL, 759, 8.
 - Grav, T.; Mainzer A.; Bauer, J.; **Masiero, J.R.**; Nugent, C.; "WISE/NEOWISE Observations of the Jovian Trojan Population: Taxonomy". 2012, ApJ, 759, 49.
 - **Masiero, J.R.**; Mainzer, A.; Grav, T.; Bauer, J.; Jedicke, R.; "Revising the age for the Baptistina asteroid family using WISE/NEOWISE data". 2012, ApJ, 759, 14.
 - Bauer, J.M.; Kramer, E., Mainzer, A.K.; Stevenson, R., Grav, T.; **Masiero, J.**; et al. "WISE/NEOWISE Preliminary Analysis and Highlights of the 67p/Churyumov-Gerasimenko near Nucleus Environs". 2012, ApJ, 758, 18.
 - Nugent, C.; Mainzer, A.; **Masiero, J.**; Grav, T.; Bauer, J.; "The Yarkovsky Drift's Influence on NEAs: Trends and Predictions with NEOWISE Measurements". 2012, AJ, 144, 75.
 - Mainzer, A.; Grav, T.; **Masiero, J.**; Bauer, J.; et al; "Characterizing Subpopulations within the near-Earth Objects with NEOWISE: Preliminary Results". 2012, ApJ, 752, 110.
 - **Masiero, J.**; Mainzer, A.; Grav, T.; et al; "A revised asteroid polarization-albedo relationship using WISE/NEOWISE data". 2012, ApJ, 749, 104.
 - Bauer, J.M.; Mainzer, A.K.; Grav, T.; Walker, R.G.; **Masiero, J.**; et al. "WISE/NEOWISE observations of Active Bodies in the Main Belt". 2012, ApJ, 747, 49.
 - Mainzer, A.; **Masiero, J.**; Grav, T.; Bauer, J.; et al; "NEOWISE Studies of Asteroids with Sloan Photometry: Preliminary Results". 2011, ApJ, 745, 7.
 - Grav, T.; Mainzer, A.; Bauer, J.; **Masiero, J.**; et al; "WISE/NEOWISE Observations of the Hilda Population: Preliminary Results". 2011, ApJ, 744, 197.
 - Mainzer, A.; Grav, T.; Bauer, J.; **Masiero, J.**; et al; "NEOWISE Observations of Near-Earth Objects: Preliminary Results". 2011, ApJ, 743, 156.
 - Grav, T.; Mainzer, A.; Bauer, J.; **Masiero, J.**; et al; "WISE/NEOWISE Observations of the Jovian Trojans: Preliminary Results". 2011, ApJ, 742, 40.
 - Mainzer, A.; Grav, T.; **Masiero, J.**; Bauer, J.; et al; "NEOWISE Studies of Spectrophotometrically Classified Asteroids: Preliminary Results". 2011, ApJ, 741, 90.
 - **Masiero, J.**; Mainzer, A.; Grav, T.; et al; "Main Belt Asteroids with WISE/NEOWISE I: Preliminary Albedos and Diameters". 2011, ApJ, 741, 68.
 - Sonnett, S.; Kleyna, J.; Jedicke, R. & **Masiero, J.** "Limits on the Size and Orbit Distribution of Main Belt Comets". 2011, Icarus, 215, 534.
 - Bauer, J.M.; Walker, R.G.; Mainzer, A.K.; **Masiero, J.**; et al. "WISE/NEOWISE observations of comet 103P/Hartley 2". 2011, ApJ, 738, 171.
 - Mainzer, A.; Grav, T.; **Masiero, J.**; et al; "Thermal Model Calibration for Minor Planets Observed with WISE/NEOWISE: Comparison with Infrared Astronomical Satellite". 2011, ApJL, 737, 9.
 - Mainzer, A.; Grav, T.; **Masiero, J.**; et al; "Thermal Model Calibration for Minor Planets Observed with Wide-field Infrared Survey Explorer/NEOWISE". 2011, ApJ, 736, 100.
 - Mainzer, A.; Bauer, J.; Grav, T.; **Masiero, J.**; et al; "Preliminary Results from NEOWISE: An Enhancement to the Wide-field Infrared Survey Explorer for Solar System Science". 2011, ApJ, 731, 53.
 - **Masiero, J.** "Albedo heterogeneity on the surface of (1943) Anteros". 2010, Icarus, 207, 795.
 - Levesque, Emily M.; Bloom, Joshua S.; ...; **Masiero, Joseph**; ... "GRB090426: the environment of a rest-frame 0.35-s gamma-ray burst at a redshift of 2.609". 2010, MNRAS, 401, 963.
 - **Masiero, J.**; Hartzell, C.; Scheeres, D.J. "The effect of the dust size distribution on asteroid polarization". 2009, AJ, 138, 1557.
 - Price, A.; **Masiero, J.**; et al. "Polarimetry and the Long Awaited Superoutburst of BZ UMa". 2009, PASP, 121, 1205.
 - **Masiero, J.**; Jedicke, R.; Durech, J.; Gwyn, S.; Denneau, L.; Larsen, J. "The Thousand Asteroid Light Curve Survey". 2009, Icarus, 204, 145.
 - 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.

INVITED

RESEARCH TALKS

- **09/29/21**: MW-Gaia Workshop on Asteroids of Comets, Finland, “Chasing asteroids in the infrared: NEOWISE and NEO Surveyor”
- **10/13/20**: UC Irvine Seminar, “The infrared sky as seen by NEOWISE”
- **8/27/20**: Greater IPAC Science Symposium, Caltech, “Comet NEOWISE”
- **3/25/20**: Virtual seminar for IPAC, Caltech, “Asteroids in the Infrared: NEOWISE and NEO Surveyor”
- **3/5/20**: Web-seminar for LIneA, Observatorio Nacional, Brazil, “NEOWISE tools and techniques”
- **1/7/20**: American Astronomical Society Meeting: Planets, exoplanets, and planet formation with Gemini large and long programs (LLPs) Special Session, “Chasing Near-Earth Asteroids at the Bottom of the Sky”
- **12/18/19**: JPL Invited Seminar, “Hazards from Near-Earth Asteroids”)
- **12/9/19**: Tucson Near-Earth Asteroid Workshop, “NEOWISE Mission Update”)
- **10/4/19**: XXIV Ciclo de Cursos Especiais, Brazilian National Observatory, “The NEOWISE view of the Solar System”
- **10/3/19**: XXIV Ciclo de Cursos Especiais, Brazilian National Observatory, “Asteroid dynamics, and family age dating”
- **10/1/19**: XXIV Ciclo de Cursos Especiais, Brazilian National Observatory, “Determining asteroid physical properties from remote sensing”
- **9/30/19**: XXIV Ciclo de Cursos Especiais, Brazilian National Observatory, “An Overview of the Small Bodies of the Solar System”
- **7/29/19**: Team Radar Meeting, LPI, “NEOWISE and radar, Better together”
- **6/24/19**: NASA Small Body Assessment Group Meeting, “NEOCam update”
- **5/29/19**: Queen’s University Belfast Seminar, “The NEOCam Mission: Goals, Design, and Status”
- **4/19/19**: UCLA Planetary Science Seminar, “The NEOCam Mission: Goals, Design, and Status”
- **8/3/17**: Las Cumbres Observatory, Invited Seminar, “Asteroid Families: Properties, Origins, and Evolution”
- **4/12/17**: Invited Talk, Asteroids, Comets, Meteors 2017 Conference, Montevideo, Uruguay,

“NEOWISE and NEOCam: Present and Future NEO Surveys”

- **11/17/16:** Astronomy Department Colloquium, University of Washington, *“NEOWISE: Searching the infrared sky for asteroids and comets”*
- **10/10/16:** Invited Speaker: Hotwiring the Transient Universe 5, Villanova, PA, *“NEOWISE: Mission Overview and Recent Results”*
- **09/16/16:** Lunar and Planetary Institute Colloquium, *“NEOWISE: Mission Overview and Recent Results”*
- **05/20/16:** Invited Speaker: Greater IPAC Technology Symposium 2016, *“NEOCam: The Near-Earth Object Camera”*
- **04/23/15:** UCLA Planetary Science Seminiar, *“Physical properties of Asteroid Families”*
- **03/09/15:** NRC Herzberg Astronomy and Astrophysics, Univ. Victoria Seminiar, *“Asteroid family physical properties”*
- **08/25/14:** Invited Speaker: Small Bodies Dynamics Meeting 2014, Ubatuba, Brazil, *“Determining ages of asteroid families using new physical property data”*
- **07/01/14:** Invited Speaker: Asteroids, Comets, Meteors 2014, Helsinki, Finland, *“Physical Properties of Asteroid Families”*
- **02/15/13:** iPLEX lunch talk, University of California, Los Angeles, *“Asteroid Families as a Probe of the History of the Solar System/Chelyabinsk”*
- **01/17/13:** Invited Colloquium, University of British Columbia, *“The WISE view of the Solar System”*
- **03/09/12:** NAO Lunch Talk, *“Recent Results from the NEOWISE Mid-IR Solar System Survey”*
- **03/07/12:** NASA Jet Propulsion Laboratory Seminar, *“Asteroid Families: Compositions, Collisions, and the Chronology of the Solar System”*
- **10/19/10:** NAO Coffee Discussion, *“WISE: The Solar System and Beyond”*
- **10/14/10:** JPL Postdoc Seminar, *“WISE Observations of Main Belt Asteroids”*
- **10/22/09:** UCLA Lunch Talk, *“The Thousand Asteroid Light Curve Survey”*
- **09/25/09:** Ph.D. Defense, *“Light Curve Signatures of the Physical Properties of Small Asteroids”*
- **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”*
- **12/14/06:** Lunchtalk presentation to the US Naval Academy Physics and Astronomy Dept, *“The Thousand Asteroid Light Curve Survey”*

PUBLIC TALKS,
ARTICLES, AND
INTERVIEWS

- **10/12/21:** Sonora Astronomical Society, *“Chasing asteroids in the Infrared: NEOWISE and NEO Surveyor”*
- **09/21/21:** UniverseUnplugged Ask the Astronomers Live, *“‘Oumuamua: Space Rock or Alien Artifact?”*
- **07/15/20:** NASA Science Live Interview, *“How to spot Comet NEOWISE”*
- **July 2020:** Interviews with various news organizations, *“Comet NEOWISE”*
- **03/13/20:** ‘Imiloa Maunakea Skies talk, *“Searching for Asteroids from Space: The Near-Earth Object Surveyor mission”*
- **08/25/19:** UCLA Meteorite Gallery Public Talk, *“Before they were meteorites: the hazard from Near-Earth Objects”*
- **07/19/19:** San Diego Comic Con 2019 Panelist, *“Ripped from the Pulp: Real-World Threats to Mankind”*
- **09/21/18:** Glendale College Planetarium, *“Near Earth Asteroids”*
- **04/24/18:** Carnegie Observatories Astronomy Lecture Series, *“You Can’t Make a Solar System Without Breaking a Few Asteroids: The Tale of Asteroid Families”*
- **04/18/18:** Seattle Astronomical Society, *“Interstellar Asteroid ‘Oumuamua”*
- **04/10/18:** Penn State Astronomy Dept Friedman Lecture, *“You Can’t Make a Solar System Without Breaking a Few Asteroids: The Tale of Asteroid Families”*
- **04/06/18:** Orange County Astronomers, *“Searching for our Nearest Neighbors, the Near-Earth Asteroids: Hazard, Resource, and Destination”*

- **04/04/18**: Mt Holyoke Astronomy Class Lecture, *“Interstellar Asteroid ‘Oumuamua”*
- **02/03/18**: Riverside Astronomical Society, *“Searching for our Nearest Neighbors, the Near-Earth Asteroids: Hazard, Resource, and Destination”*
- **01/18/18**: Los Angeles Chancery Club, *“Searching for our Nearest Neighbors, the Near-Earth Asteroids: Hazard, Resource, and Destination”*
- **08/20/17**: Wine Country Eclipse Festival, *“A Tour of the Solar System”*
- **02/24/17**: Ventura County Astronomical Society, *“Asteroid Families: A History Told Through Collisions”*
- **12/04/16**: SpacePod Interview: *“Asteroid families with Dr. Masiero”*
- **11/16/16**: Seattle Astronomy Society, University of Washington, *“NEOWISE: Searching the infrared sky for asteroids and comets”*
- **01/26/16**: Planetary Society Guest Blogger: *“Running Down A Comet”*
- **08/02/15**: SpacePod Interview: *“Polarized light with Dr. Masiero”*
- **06/06/13**: The Blue Dot Report: *“Families in the Asteroid Belt”*
- **11/05/10**: St. Philip School Reverse Science Fair Day: *“A Universe of Infrared”*
- **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”*

PROFESSIONAL
SERVICE

IAU Commission F4 - Organizing Committee Member	Aug 2021 to present
53rd DPS Annual Meeting - Virtual Organizing Committee Chair	Apr 2021 to present
DPS Professional Culture & Climate Subcommittee Member	Nov 2020 to present
IAWN Apophis Impact Exercise Spacecraft Working Group Lead	Oct 2020 to Jun 2021
NASA Planetary Data Ecosystem Independent Review Board Member	Nov 2020 to Mar 2021
IAU 2022 Focus Meeting 10 “Synergy of Small Telescopes and Large Surveys...” SOC Member	2020-present
NASA Planetary Data System Reviewer	2019-present
Member of the JPL Palomar Allocation Committee	Oct 2017-present
External Member for 4 TACs including: Kepler2, Taiwan, Subaru	Nov 2014-present
NASA ROSES and NSF review panels Panel Chair for 3; Panelist for 9 others; External for 9	2012-present
National Research Foundation of Ukraine External Grant Reviewer	2020

JPL Small Bodies Hiring Committee Co-Chair	2019
IAU 2018 Focus Meeting 1 “A Century of Asteroid Families” Organizer, SOC Chair, Proceedings Editor	2016-2019
Member of the NOAO Solar System TAC	Oct 2014-May 2017
WISE at 5 Science Organizing Committee/Local Organizing Committee	2014-2015
<i>Asteroids IV</i> Science Organizing Committee	2013-2015

TEACHING

ASTEROID Summer Academy Lecture on NEOWISE science results, University of Arizona	July 2021
NEOWISE Survey and Science lecture to Asteroid Apocalypse class, American University	Nov 2020
ASTEROID Fall Academy Lecture on Asteroid Family Science, University of Puerto Rico, Humacao	Oct 2020
ASTEROID Summer Academy Lecture on Asteroid Physical Properties, University of Arizona	July 2020
Planetary Science Guest Lecturer, 4-lecture series, Brazilian National Observatory ‘XXIV Cycle of Special Courses’	Fall 2019
Learning Works Astronomy team-teacher, Learning Works School Pasadena	Fall 2013
Inquiry-based photometer lab for Electro-Optics Class, Maui Community College	3 & 5 March 2008
Teaching Assistant, Dept of Physics and Astronomy, University of Hawaii	Aug 2004 to May 2005
“Mission to Mars” Instructor, Action Potential Science Experience, Pennsylvania State University	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

OUTREACH EVENTS

Eliot Arts Magnet Academy	
• Infrared Camera Presentation	2018-2020
JPL Open House	
• Volunteer	2010-2019
Mount Wilson Class Visits	
• Volunteer Presenter	2017-2018
Learning Works visits to Caltech	
• Volunteer Presenter	2012-2015
Twenty Wonder Festival of the Mind	

- Infrared Camera Presentation **2012**
- 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**

MEMBERSHIP

Professional Societies:

- International Astronomical Union **from 2012**
- IAU Commission F4 “Asteroids Comets and TNOs” **2021-present**
- IAU Division III Commission 15 **2012-2015**
- AAS Division of Planetary Science **from 2007**
- American Astronomical Society **from 2001**

ACTIVITIES

- Glendale Woodturners Guild,
Member **2018-present**
- Penn State Schreyer Honors College,
Applicant Interviewer **2013 - present**
- LA County Fair:
Biscuits (1st place) **2017, 2019**
French Bread (1st place) **2017, 2019**
- Arroyo Food Co-op, Board of Directors,
Director **05/2011 - 04/2015**
- Bagpiper with the Celtic Pipes and Drums of Hawaii **01/2008 - 09/2009**