

Sloane J. Wiktorowicz

Curriculum Vitae

CONTACT INFORMATION	187 Natural Sciences II Astronomy Department, MS UCO/Lick University of California, Santa Cruz Santa Cruz, CA 95064	Phone: (831) 502-7258 Email: sloanew@ucolick.org Website: www.ucolick.org/~sloanew
RESEARCH INTERESTS	Extrasolar planet detection and characterization, optical and infrared instrumentation (all stages), polarimetry, debris disk identification in scattered light, high contrast imaging	
EDUCATION	2003-2008	California Institute of Technology: Ph.D., Planetary Science, defended July 2008 Dissertation: "Unambiguous Black Hole Mass from Polarimetry and Application to Hot Jupiters"; Advisor: Shrinivas R. Kulkarni
	1999-2003	University of California, Santa Cruz: B.S., Physics with Astronomy minor, <i>summa cum laude</i> (4.0 GPA), graduated June 2003 Thesis: "Morphologies of Distant Galaxies"; Advisor: David C. Koo
RESEARCH POSITIONS	2011-present	Sagan Fellow: Astronomy Department, University of California, Santa Cruz Sponsor: Gregory P. Laughlin
	2008-2011	Postdoctoral Scholar: Astronomy Department, University of California, Berkeley Supervisors: James R. Graham and Paul Kalas
	2003-2008	Graduate Student Researcher: Planetary Science Department, California Institute of Technology; Advisor: Shrinivas R. Kulkarni
	1999-2003	Undergraduate Research Assistant: Astronomy Department, University of California, Santa Cruz; Advisor: David C. Koo
HONORS AND AWARDS	2011-present	NExScI Sagan Fellowship
	2003	Chancellor's Award, UCSC (awarded to 1% of graduating class)
	2003	Highest Honors in the Major, Physics, UCSC
	1999	President's Undergraduate Fellowship, UCSC
	1999-2003	Regents Scholar, UCSC
	1999	Second Place, Jack Horkheimer Award for Exceptional Service by a Young Astronomer, Astronomical League (nationwide competition)
TEACHING EXPERIENCE	California Institute of Technology Spring 2005, 2006 Graduate Teaching Assistant for <i>Introduction to the Solar System</i> , taught by Yuk Yung (2005) and Andrew Ingersoll (2006)	
	University of California, Santa Cruz Spring 2000 Private tutor for <i>Introduction to Calculus</i>	
OBSERVING EXPERIENCE	W. M. Keck Observatory	10-m: DEIMOS, NIRC, NIRC2 (LGS and NGS AO)
	Palomar Observatory	Hale 5-m: PHARO (NGS AO), POLISH*, STEPS, WIRC *Own instrument 60-inch Palomar Testbed Interferometer
	Lick Observatory	Shane 3-m: Hamilton Spectrograph, IRCAL (NGS AO), POLISH*, POLISH2*
		Nickel 1-m: Direct Imaging Camera, POLISH2*
	Table Mountain Observatory	Pomona 1-m
TECHNICAL EXPERIENCE	Optical design, specification determination, hardware integration, high speed data acquisition, instrument control software (GPIB, RS-232, Matlab), laboratory testing, instrument commissioning	
INSTRUMENT DEVELOPMENT	2008-2013	GPI (Gemini Planet Imager): Polarization testing lead
	2008-2011	POLISH2 (POLarimeter at Lick for Inclination Studies of Hot Jupiters 2): Principal Investigator
	2006-2008	POLISH (POLarimeter for Inclination Studies of Hot Jupiters): Principal Investigator

REFEREED
PUBLICATIONS

14. De Rosa, R.J., Patience, J., Wilson, P.A., Schneider, A., **Wiktorowicz, S.J.**, Vigan, A., Marois, C., Song, I., Macintosh, B., Graham, J.R., Doyon, R., Bessell, M.S., Thomas, S., & Lai, O. 2011, *Monthly Notices of the Royal Astronomical Society*, “The VAST Survey -- III. The multiplicity of A-type stars,” submitted.
13. Frisch, P.C., Andersson, B.-G., Berdyugin, A., Pirola, V., DeMajistre, R., Funsten, H.O., Magalhaes, M., Seriacopi, D.B., McComas, D.J., Pirola, V., Schwadron, N.A., Slavin, J.D., & **Wiktorowicz, S.J.** 2012, *Astrophysical Journal*, 760, 106, “The Interstellar Magnetic Field Close to the Sun. II.”
12. De Rosa, R.J., Patience, J., Vigan, A., Wilson, P.A., Schneider, A., McConnell, N.J., **Wiktorowicz, S.J.**, Marois, C., Song, I., Macintosh, B., Graham, J.R., Bessell, M.S., Doyon, R., & Lai, O. 2012, *Monthly Notices of the Royal Astronomical Society*, 422, 2765, “The Volume-limited A-Star (VAST) survey - II. Orbital motion monitoring of A-type star multiples.”
11. McBride, J., Graham, J.R., Macintosh, B., Beckwith, S., Marois, C., Poyneer, L., & **Wiktorowicz, S.J.** 2011, *Publications of the Astronomical Society of the Pacific*, 123, 692, “Experimental Design for the Gemini Planet Imager.”
10. Frisch, P.C., Andersson, B.-G., Berdyugin, A., Funsten, H.O., Magalhaes, M., McComas, D.J., Pirola, V., Schwadron, N.A., Slavin, J.D., & **Wiktorowicz, S.J.** 2010, *Astrophysical Journal*, 724, 1473, “Comparisons of the Interstellar Magnetic Field Directions obtained from the IBEX Ribbon and Interstellar Polarizations.”
9. Muterspaugh, M.W., Hartkopf, W.I., Lane, B.F., O’Connell, J., Williamson, M., Kulkarni, S.R., Konacki, M., Burke, B.F., Colavita, M.M., Shao, M., & **Wiktorowicz, S.J.** 2010, *Astronomical Journal*, 140, 1623, “The PHASES Differential Astrometry Data Archive II: Updated Binary Star Orbits and a Long Period Eclipsing Binary.”
8. Muterspaugh, M.W., Lane, B.F., Kulkarni, S.R., Konacki, M., Burke, B.F., Colavita, M.M., Shao, M., **Wiktorowicz, S.J.**, O’Connell, J. 2010, *Astronomical Journal*, 140, 1579, “The PHASES Differential Astrometry Data Archive I: Measurements and Description.”
7. **Wiktorowicz, S.J.** 2009, *Astrophysical Journal*, 696, 1116, “Non-Detection of Polarized, Scattered Light from the HD 189733b Hot Jupiter.”
6. **Wiktorowicz, S.J.** & Matthews, K. 2008, *Publications of the Astronomical Society of the Pacific*, 120, 1282, “A High Precision, Optical Polarimeter to Measure Inclinations of High Mass X-Ray Binaries.”
5. Muterspaugh, M.W., Lane, B.F., Fekel, F.C., Konacki, M., Burke, B.F., Kulkarni, S.R., Colavita, M.M., Shao, M., & **Wiktorowicz, S.J.** 2008, *Astronomical Journal*, 135, 766, “Masses, Luminosities, and Orbital Coplanarities of the μ Orionis Quadruple Star System from PHASES Differential Astrometry.”
4. **Wiktorowicz, S.J.** & Ingersoll, A.P. 2007, *Icarus*, 186, 436, “Liquid Water Oceans in Ice Giants.”
3. Pravdo, S.H., Shaklan, S.B., **Wiktorowicz, S.J.**, Kulkarni, S., Lloyd, J.P., Martinache, F., Tuthill, P. G., & Ireland, M.J. 2006, *Astrophysical Journal*, 649, 389, “Masses of Astrometrically Discovered and Imaged Binaries: G78-28AB and GJ 231.1BC.”
2. Hansen, B.M.S., Kulkarni, S., & **Wiktorowicz, S.** 2006, *Astronomical Journal*, 131, 1106, “A Spitzer Search for Infrared Excesses around Massive Young White Dwarfs.”
1. Muterspaugh, M.W., Lane, B.F., Konacki, M., **Wiktorowicz, S.**, Burke, B.F., Colavita, M.M., Kulkarni, S.R., & Shao, M. 2006, *Astrophysical Journal*, 636, 1020, “PHASES Differential Astrometry and Iodine Cell Radial Velocities of the κ Pegasi Triple Star System.”

UNREFEREED
PUBLICATIONS

4. Maire, J., Perrin, M.D., Doyon, R., Chilcote, J., Larkin, J.E., Weiss, J.L., Marois, C., Konopacky, Q.M., Millar-Blanchaer, M., Graham, J.R., Dunn, J., Galicher, R., Marchis, F., **Wiktorowicz, S.J.**, Labrie, K., Thomas, S.J., Goodsell, S.J., Rantakyro, F.T., Palmer, D.W., & Macintosh, B.A. 2012, *Proceedings of the SPIE*, 8451, 3, “Test results for the Gemini Planet Imager data reduction pipeline.”
3. **Wiktorowicz, S.J.**, Millar-Blanchaer, M., Perrin, M.D., Graham, J.R., Thomas, S.J., Dillon, D., Fitzgerald, M.P., Maire, J., Macintosh, B.A., & Goodsell, S.J., 2012, *Proceedings of the SPIE*, 8446, 91, “Polarimetric Performance of the Gemini Planet Imager.”
2. Macintosh, B.A., Anthony, A., Atwood, J., Barriga, N., Bauman, B., Caputa, K., Chilcote, J., Dillon, D., Doyon, R., Dunn, J., Gavel, D.T., Galvez, R., Goodsell, S.J., Graham, J.R., Hartung, M., Isaacs, J., Kerley, D., Konopacky, Q., Labrie, K., Larkin, J.E., Maire, J., Marois, C., Millar-Blanchaer, M., Nunez, A., Oppenheimer, B.R., Palmer, D.W., Pazder, J., Perrin, M., Poyneer, L.A., Quirez, C., Rantakyro, F., Reshtov, V., Saddlemyer, L., Sadakuni, N., Savransky, D.,

Sivaramakrishnan, A., Smith, M., Soummer, R., Thomas, S., Wallace, J.K., Weiss, J., & **Wiktorowicz, S.** 2012, *Proceedings of the SPIE*, 8446, 1, “The Gemini Planet Imager: integration and status.”

1. Perrin, M.D., Graham, J.R., Larkin, J.E., **Wiktorowicz, S.**, Maire, J., Thibault, S., Fitzgerald, M.P., Doyon, R., Macintosh, B.A., Gavel, D.T., Oppenheimer, B.R., Palmer, D.W., Saddlemyer, L., & Wallace, J.K. 2010, *Proceedings of the SPIE*, 7736, 192, “Imaging Polarimetry with the Gemini Planet Imager.”
17. **Wiktorowicz, S.J.** 2013, *Bulletin of the American Astronomical Society*, 45, No. 1, 343.03, “Direct Detection of Exoplanets with Polarimetry.”
16. Frisch, P.C., Andersson, B., Berdyugin, A., DeMajistre, W., Funsten, H., Magalhaes, A.M., McComas, D.J., Seriacopi, D.B., Piirola, V., Schwadron, N.A., Slavin, J.D., & **Wiktorowicz, S.J.** 2012, *Bulletin of the American Astronomical Society*, 44, No. 2, 444.17, “The Local Interstellar Magnetic Field - 100 AU to 40 pc.”
15. **Wiktorowicz, S.J.** & Laughlin, G. 2012, *Bulletin of the American Astronomical Society*, 44, No. 2, 326.08, “Direct Detection of Exoplanets with Polarimetry.”
14. **Wiktorowicz, S.J.** 2011, *Bulletin of the American Astronomical Society*, 43, No. 7, 40.07, “Direct Detection of Exoplanets with Polarimetry.”
13. **Wiktorowicz, S.J.** 2011, Exploring Strange New Worlds: From Giant Planets to Super Earths Meeting, “Direct Detection of Exoplanets with Polarimetry.”
12. Frisch, P.C., Andersson, B., Berdyugin, A., Funsten, H., Magalhaes, M., McComas, D., Piirola, V., Schwadron, N., Slavin, J., & **Wiktorowicz, S.** 2011, *Bulletin of the American Astronomical Society*, 43, No. 2, 434.34, “Comparisons Of The Interstellar Magnetic Field Directions Obtained From The Ixob Ribbon And Interstellar Polarizations.”
11. Muterspaugh, M.W., Lane, B.F., Konacki, M., Burke, B.F., Colavita, M.M., Shao, M., Hartkopf, W.I., Boss, A.P., O’Connell, J., Fekel, F.C., & **Wiktorowicz, S. J.** 2011, *Bulletin of the American Astronomical Society*, 43, No. 2, 429.09, “The Planet in the HR 7162 Binary System Discovered by PHASES Astrometry.”
10. **Wiktorowicz, S.J.** & Graham, J.R. 2011, *Bulletin of the American Astronomical Society*, 43, No. 2, 318.04, “Direct Detection of Exoplanets with Polarimetry.”
9. Frisch, P.C., Andersson, B., Berdyugin, A., Funsten, H.O., Magalhaes, M., McComas, D.J., Piirola, V., Schwadron, N.A., Slavin, J.D., & **Wiktorowicz, S.J.** 2010, American Geophysical Union Meeting, SH21B-1817, “Comparisons of the Interstellar Magnetic Field Directions obtained from the IBEX Ribbon and Interstellar Polarization Measurements.”
8. **Wiktorowicz, S.J.**, Duchene, G., Graham, J.R., & Kalas, P. 2010, Proceedings of the conference In the Spirit of Lyot 2010: Direct Detection of Exoplanets and Circumstellar Disks, “Direct Polarimetric Detection of Scattered, Optical Light from Debris Disks.”
7. **Wiktorowicz, S.**, Graham, J.R., Duchene, G., & Kalas, P. 2010, *Bulletin of the American Astronomical Society*, 42, 582, “Anomalous Polarization of the Gamma Ophiuchi Debris Disk.”
6. **Wiktorowicz, S.J.** 2009, NASA Ames Solar-Extrasolar Meeting, “Non-Detection of Scattered Light from the HD 189733b Hot Jupiter.”
5. **Wiktorowicz, S.J.** 2009, *Bulletin of the American Astronomical Society*, 41, 482, “Non-Detection of Polarized, Scattered Light from the HD 189733b Hot Jupiter.”
4. **Wiktorowicz, S.J.** & Graham, J. R. 2008, Center for Adaptive Optics Retreat, “Polarimetric Debris Disk Identification for GPI.”
3. **Wiktorowicz, S.**, Matthews, K., & Kulkarni, S.R. 2007, *Bulletin of the American Astronomical Society*, 39, 874, “A High-Precision, Optical Polarimeter to Measure Inclinations of High Mass X-Ray Binaries.”
2. **Wiktorowicz, S.**, Kulkarni, S.R., Pravdo, S.H., & Shaklan, S.B. 2006, *Bulletin of the American Astronomical Society*, 38, 1125, “LGSAO Imaging of STEPS Astrometric Candidates.”
1. **Wiktorowicz, S.J.** & Ingersoll, A.P. 2004, *Bulletin of the American Astronomical Society*, 36, 1072, “Oceans in Cold, Water-Rich Planets.”

CONFERENCE
PROCEEDINGS

EXTERNAL
SUPPORT

2013-2015 Title: “Direct Detection of Polarized, Scattered Light from Exoplanets,”
Agency/Program: NASA Origins NNX13AF63G
Funding level: \$283,834
Role: Science PI (due to institutional policy for postdocs, Administrative PI Gregory Laughlin)

- 2011-2014 Title: “Direct Detection of Exoplanets and Debris Disks with Polarimetry,”
Agency/Program: NExSci Sagan Fellowship
Funding level: \$337,583
Role: Principal Investigator
- 2011-2013 Title: “Direct Detection & Characterization of Extra-Solar Planets”
Agency/Program: NASA Origins NNX11AD21G
Funding level: \$416,946
Role: Major sections written (PI Paul Kalas, UC Berkeley)
- 2009-2013 Title: “Direct Detection & Characterization of Extra-Solar Planets”
Agency/Program: NSF AST-0909188
Funding level: \$415,335
Role: Major sections written (PI James Graham, UC Berkeley)
- 2008-2009 Title: “Direct Detection of Extrasolar Planets”
Agency/Program: Lawrence Livermore National Laboratory IGPP minigrant
Funding level: \$26,400
Role: Major sections written (PI James Graham, UC Berkeley)
- 2006 Agency/Program: Moore Foundation Endowment
Funding level: \$50,000
Role: Science PI (due to institutional policy for graduate students, Administrative PI Shri Kulkarni)

INVITED
TALKS

- Feb. 2013 SOFIA Science Center, Moffett Field, CA, “Direct Detection of Exoplanets with Polarimetry.”
- Nov. 2012 Sagan/Michelson Fellows Symposium, Pasadena, CA, “Direct Detection of Exoplanets with Polarimetry.”
- Sep. 2012 Lick Observatory Workshop, Mountain View, CA, “Direct Detection of Exoplanets with Polarimetry.”
- Sep. 2011 Northwestern University, The Future of Astronomy: Fellows at the Frontiers of Astrophysics Meeting, “Direct Detection of Exoplanets with Polarimetry.”
- Nov. 2008 Lawrence Livermore National Laboratory, “Non-Detection of Polarized, Scattered Light from the HD 189733b Hot Jupiter.”
- May 2008 Jet Propulsion Laboratory, “A High-Precision Polarimeter to Measure Black Hole and Exoplanet Masses.”
- Dec. 2007 University of California, Berkeley, “A High-Precision Polarimeter to Measure Black Hole and Exoplanet Masses.”

CONTRIBUTED
TALKS

- Mar. 2013 Bay Area Exoplanet Science Meeting 4, Mountain View, CA, “A Stormy Exoplanet Seen in Optical Polarimetry?” (pending)
- Sep. 2012 Bay Area Exoplanet Science Meeting 2, Mountain View, CA, “Direct Detection of Exoplanets with Polarimetry.”
- Jan. 2012 American Astronomical Society Meeting 219, Austin, TX, “Direct Detection of Exoplanets with Polarimetry.”
- May 2011 Exploring Strange New Worlds: From Giant Planets to Super Earths Meeting, Flagstaff, AZ, “Direct Detection of Exoplanets with Polarimetry.”
- Mar. 2011 University of California, Berkeley, “Direct Detection of Exoplanets with Polarimetry.”
- Mar. 2011 University of California, Santa Cruz, “Direct Detection of Exoplanets with Polarimetry.”
- Jan. 2011 American Astronomical Society Meeting 217, Seattle, WA, “Direct Detection of Exoplanets with Polarimetry.”
- Nov. 2010 University of California, Berkeley, “Direct Polarimetric Detection of Scattered, Optical Light from Debris Disks.”
- Oct. 2010 In the Spirit of Lyot Meeting, Université Paris Diderot, “Direct Polarimetric Detection of Scattered, Optical Light from Debris Disks.”
- Jan. 2010 University of California, Berkeley, “Anomalous Polarization of the γ Ophiuchi Debris Disk and Polarimetry of Other Disks.”

	Jan. 2010	American Astronomical Society Meeting 215, Washington, DC, “Anomalous Polarization of the γ Ophiuchi Debris Disk and Polarimetry of Other Disks.”
	Oct. 2009	Gemini Planet Imager Science Meeting, Berkeley, CA, “High Resolution Spectroscopy.”
	Jan. 2009	American Astronomical Society Meeting 213, Long Beach, CA, “Non-Detection of Polarized, Scattered Light from the HD 189733b Hot Jupiter.”
	Oct. 2008	University of California, Berkeley, “Unambiguous Hot Jupiter Mass from Polarimetry.”
	Jan. 2008	American Astronomical Society Meeting 211, Austin TX, dissertation talk, “A High-Precision, Optical Polarimeter to Measure Inclinations of High Mass X-Ray Binaries.”
	Nov. 2007	California Institute of Technology, Pasadena, CA, “A High-Precision Polarimeter to Measure Black Hole and Exoplanet Masses.”
	Nov. 2006	California Institute of Technology, Pasadena, CA, “Unambiguous Hot Jupiter Masses through Polarimetry.”
	Nov. 2005	California Institute of Technology, Pasadena, CA, “Ice Giants: Too Warm and Dry for Oceans?”
	Nov. 2004	AAS Division of Planetary Sciences Meeting, Louisville, KY, “Oceans in Cold, Water Rich Planets.”
CONFERENCES ATTENDED	2013	IAUS 299: Exploring the Formation and Evolution of Planetary Systems. Victoria, Canada (pending).
	2012	Sagan/Michelson Fellows Symposium. Pasadena, CA.
	2012–2013	Bay Area Exoplanet Science Meetings 2, 4. Mountain View, CA.
	2012	Lick Observatory Workshop. Mountain View, CA.
	2011	Extreme Solar Systems 2. Moran, WY.
	2011	The Future of Astronomy: Fellows at the Frontiers of Astrophysics Meeting (invited). Evanston, IL.
	2011	Exploring Strange New Worlds: From Giant Planets to Super Earths Meeting. Flagstaff, AZ.
	2010	In the Spirit of Lyot Meeting. Paris, France.
	2009	Gemini Planet Imager Science Meeting. Berkeley, CA.
	2009	NASA Ames Solar-Extrasolar Meeting. Moffett Field, CA.
	2008	Center for Adaptive Optics Retreat. Lake Arrowhead, CA.
	2007	Thirty-Meter Telescope Workshop. Irvine, CA.
	2007–2013	AAS Winter Meetings. Austin, TX; Seattle, WA; Washington, DC; Long Beach, CA.
	2006–2008, 2010	Keck Science Meetings. Irvine, Pasadena, Santa Cruz, Berkeley, CA.
	2006	Cool Stars Meeting. Pasadena, CA.
	2006	Palomar Science Meeting. Pasadena, CA.
	2004	AAS Division of Planetary Science Meeting. Louisville, KY.
	2004	Terrestrial Planet Finder Workshop. San Diego, CA.
	2004, 2009	Center for Adaptive Optics Summer School. Santa Cruz, CA.
	2004	Michelson Summer School. Pasadena, CA.
STUDENTS SUPERVISED	2013-present	Ninos Hermis, UC Santa Cruz undergraduate class of 2013
	2011-present	Larissa Nofi, UC Santa Cruz undergraduate class of 2014
	2009-2010	Daniel Driver, UC Berkeley undergraduate class of 2011
OTHER PEDAGOGY	2013	Invited talk, Friends of Los Gatos Library, Los Gatos, CA (pending)
	2013	Science fair judge, Pacific Collegiate School, Santa Cruz, CA
	2012	Guest lecturer, UC Santa Cruz Astronomy 118 class
	2011	Guest lecturer, UC Berkeley Astronomy 290 class
	2009	Co-organizer, Gemini Planet Imager Science Meeting, Berkeley, CA
	2009	Invited talk, Eastbay Astronomical Society, Chabot Space & Science Center
	2007	Career fair, Nightingale Middle School, L.A. Unified School District
MEDIA COVERAGE	Feb. 2012	Astrobiology Magazine: “Scattered Light Could Reveal Alien Atmospheres”
	Feb. 2012	Space.com: “How Scattered Light May Reveal Alien Planet Atmospheres”

Oct. 2006 KenCrowell.com: "No Ocean on Neptune-Yet"
Oct. 2006 UniverseToday.com: "Are There Oceans on Neptune?"
Oct. 2006 EarthSky.com: "Study Suggests Possible Future Ocean on Neptune"