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<b>Research Interests</b>	High contrast observations of circumstellar dust and extrasolar planets; infrared astronomical instrumentation and techniques.	
<b>Education</b>	<b>Ph. D. in Astronomy &amp; Astrophysics.</b> <i>A High Angular Resolution Survey of Circumstellar Dust around Herbig Ae/Be Stars</i> Advisor: James R. Graham	<b>University of California, Berkeley</b> September 2006
	<b>A. B. in Physics and Astronomy.</b> <i>magna cum laude</i>	<b>Harvard University</b> June 2000
<b>Honors and Awards</b>	NSF Astronomy & Astrophysics Postdoctoral Fellowship	2007-
	Mary Elizabeth Uhl Prize, for outstanding achievement in a graduate dissertation	2006
	NASA Michelson Graduate Fellowship	2003-2006
	Phi Beta Kappa	2000
	John Harvard Scholarship, for excellence in scholarship at Harvard University.	1997-2000
<b>Research Positions</b>	<b>University of California, Los Angeles</b> <i>NSF Astronomy &amp; Astrophysics Postdoctoral Fellow</i>	September 2007-
	<b>University of California, Berkeley</b> <i>Postdoctoral Researcher</i>	September 2006–August 2007
	<i>Graduate Student Researcher</i>	2002-2006
	<b>Harvard University</b> <i>Undergraduate Research Assistant,</i> Prof. Josh Grindlay	June 1998–June 2000
	<i>Undergraduate Research Assistant,</i> Prof. Isaac Silvera	Sept 1997–May 1998
<b>Teaching Experience</b>	<b>University of California, Los Angeles</b> Lecturer for <i>Introduction to Astrophysics</i> Co-taught with Prof. Andrea Ghez and led curriculum redevelopment	Winter 2009
	<b>University of California, Berkeley</b> <i>Head Graduate Student Instructor,</i> Advanced Astronomy Lab, Prof. James Graham	Fall 2004
	<i>Head Graduate Student Instructor,</i> Introduction to Astrophysics, Prof. Hy Spinrad	Fall 2001
	<i>Graduate Student Instructor,</i> Introduction to General Astronomy, Prof. Gibor Basri	Spring 2001
	<i>Graduate Student Instructor,</i> Introduction to General Astronomy, Don Goldsmith	Fall 2000

**Grants  
Awarded as PI\***

**NSF AST-0702933**, Astronomy & Astrophysics Postdoctoral Fellowship “The Birthplace of Planets: High Contrast Imaging of Circumstellar Disks”, (2007-2010), \$214,000.

**NASA HST GO-11155**, Hubble Space Telescope Cycle 16 program “Dust Grain Evolution in Herbig Ae Stars: NICMOS Coronagraphic Imaging and Polarimetry” (2007-2009), \$168,739.

**NSF AST-0849137**, Special Programs in Astronomy “NSF Astronomy & Astrophysics Postdoctoral Fellows Annual Symposium 2009”, (2008-2009), \$16,482.

*\*: Per UCLA policy, grants awarded while a postdoc have been processed with Prof. Andrea Ghez as administrative PI.*

**Grants  
Awarded as Co-I**

**NASA HST GO 12016**, Hubble Space Telescope Cycle 17 program “The Stars and Edge-on Disks of PDS 144: An Intermediate-Mass Analog of Wide T Tauri Multiple Stars”, (2010-2011), \$16,183 (budget submitted, approval pending).

**Selected  
Invited Talks**

<b>Cornell University</b>	Astronomy Colloquium, October 2009
<b>University of Rochester</b>	Astronomy Colloquium, October 2009
<b>NASA Goddard Space Flight Center</b>	Exoplanets Seminar, September 2009
<b>Space Telescope Science Institute</b>	Star and Planet Formation Seminar, September 2009
<b>Subaru Exoplanets and Disks Conference</b>	Invited lecture, March 2009
<b>Astronomical Polarimetry 2008</b>	Invited lecture, August 2008
<b>Center for Adaptive Optics 2007 Fall Retreat</b>	Invited lecture, November 2007
<b>2007 AAS Meeting</b>	Special Session on Mid-Infrared Astronomy, January 2007
<b>NASA Ames Research Center</b>	SOFIA Colloquium, February 2006

**Professional  
Memberships**

American Astronomical Society  
AAS Division of Planetary Sciences  
International Astronomical Union  
Center for Adaptive Optics  
American Association for the Advancement of Science  
National Postdoctoral Association

**Professional  
Service**

Referee for the *Astrophysical Journal*  
Local Organizing Committee for *The Spirit of Lyot 2007* conference in Berkeley, CA.  
Co-chair for the 2009 NSF Postdoctoral Fellows Symposium

**Telescope  
Experience**

W. M. Keck Observatory: NIRC2, OSIRIS, LWS. NGS and LGS AO. Keck Interferometer  
Gemini Observatory: ALTAIR, MICHELLE, GMOS, T-ReCS.  
Lick Observatory Shane 3-m: IRCAL, PFCAM.  
ESO Very Large Telescope: SINFONI.  
Hubble Space Telescope: NICMOS, ACS.  
Spitzer Space Telescope: IRAC, IRS, MIPS.  
CARMA, VLA, Chandra.

**Undergraduate  
Research Students  
Advised**

Breann Sitarski, UCLA '10. June 2008-present  
Jose Salcido, UCLA '10. June-December 2008  
Rebecca Krall, Carnegie Mellon '11. UCLA REU, Summer 2009.

## Publications in Process

S. Hinkley, B. R. Oppenheimer, D. Brenner, N. Zimmerman, L. C. Roberts Jr., I. R. Parry, R. Soummer, A. Sivaramakrishnan, M. Simon, **M. D. Perrin**, D. L. King, J. P. Lloyd, A. Bouchez, J. E. Roberts, R. Dekany, C. Beichman, L. Hillenbrand, R. Burruss, M. Shao, and G. Vasisht. ApJ submitted. [“Discovery and Characterization of a Faint Stellar Companion to the A3V Star  \$\zeta\$  Virginis”](#)

J. Leconte, R. Soummer, S. Hinkley, B. R. Oppenheimer, A. Sivaramakrishnan, D. Brenner, J. Kuhn, J. P. Lloyd, **M. D. Perrin**, R. Makidon, L. C. Roberts Jr., J. R. Graham, M. Simon, R. A. Brown, N. Zimmerman, G. Chabrier, I. Baraffe, ApJ submitted, [“Lyot Project survey statistical analysis: Information from Non-Detection”](#)

## Refereed Publications

**M. D. Perrin**, G. Schneider, G. Duchene, C. Pinte, C.A. Grady, J. Wisniewski, D. C. Hines. 2009. ApJL 707, L132-136. [“The Case of AB Aurigae’s Disk in Polarized Light: Is There Truly a Gap?”](#)

J. Pott, **M. D. Perrin**, E. Furlan, S. Metchev, A. M. Ghez, T. M. Herbst. ApJ in press. [“Ruling out Stellar Companions and Resolving the Innermost Regions of Transitional Disks with the Keck Interferometer”](#)

S. Hinkley, B. R. Oppenheimer, R. Soummer, D. Brenner, J. R. Graham, **M. D. Perrin**, A. Sivaramakrishnan, J. P. Lloyd, L. C. Roberts, & J. Kuhn. 2009. ApJ 701, 804-810. [“Speckle Suppression Through Dual Imaging Polarimetry, and a Ground-based Image of the HR 4796A Circumstellar Disk”](#)

J. D. Monnier, P. G. Tuthill, M. Ireland, R. Cohen, A. Tannirkulam, & **M. D. Perrin**. 2009. ApJ 700, 491-505. [“Mid-Infrared Size Survey of Young Stellar Objects: Description of Keck Segment-Tilting Experiment and Basic Results”](#)

**M. D. Perrin**, W. D. Vacca, & J. R. Graham. 2009. AJ 137 4468. [“Evidence for an Edge-On Disk around the Young Star MWC 778 from Infrared Imaging and Polarimetry”](#)

C. Pinte, D. L. Padgett, F. Ménard, K. R. Stapelfeldt, G. Schneider, J. Olofsson, O. Panić, J. C. Augereau, G. Duchêne, J. Krist, K. Pontoppidan, **M. D. Perrin**, C. A. Grady, J. Kessler-Silacci, E. F. van Dishoeck, D. Lommen, M. Silverstone, D. C. Hines, S. Wolf, G. A. Blake, T. Henning, & B. Stecklum. 2008. A&A 489, 633-650. [“Probing dust grain evolution in IM Lupi’s circumstellar disc. Multi-wavelength observations and modelling of the dust disc”](#)

B. Zuckerman, C. Melis, I. Song, D. S. Meier, **M. D. Perrin**, B. Macintosh, C. Marois, A. J. Weinberger, J. H. Rhee, J. R. Graham, J. H. Kastner, P. Palmer, T. Forveille, E. E. Becklin, D. J. Wilner, T. S. Barman, G. W. Marcy, & M. S. Bessell. 2008. ApJ 683, 1085-1103. [“Gas and Dust Associated with the Strange, Isolated Star BP Piscium”](#)

B. R. Oppenheimer, D. Brenner, S. Hinkley, N. Zimmerman, A. Sivaramakrishnan, R. Soummer, J. Kuhn, J. R. Graham, **M. D. Perrin**, J. P. Lloyd, L. C. Roberts Jr., & D. M. Harrington. 2008. ApJ 679, 1574-1581. [“The Solar-System-Scale Disk around AB Aurigae”](#)

**M. D. Perrin**, J. R. Graham, & J. P. Lloyd. 2008. Publications of the Astronomical Society of the Pacific 120, 555-570. [“The IRCAL Polarimeter: Design, Calibration, and Data Reduction for an Adaptive Optics Imaging Polarimeter”](#)

B. C. Matthews, J. R. Graham, **M. D. Perrin**, & P. Kalas. 2007. ApJ 671, 483-496. [“The Molecular Gas Environment around Two Herbig Ae/Be Stars: Resolving the Outflows of LkH \$\alpha\$  198 and LkH \$\alpha\$  225S”](#)

**M. D. Perrin** and J. R. Graham. 2007. ApJ 670, 499-508. "LGS AO Integral Field Spectroscopy of a Narrowly Collimated Bipolar Jet from the Herbig Ae star LkH $\alpha$  233"

S. Hinkley, B. R. Oppenheimer, R. Soummer, A. Sivaramakrishnan, L. C. Roberts Jr., J. Kuhn, R. B. Makidon, **M. D. Perrin**, J. P. Lloyd, K. Kratter, and D. Brenner. 2006. ApJ 654 633. "Temporal Evolution of Coronagraphic Dynamic Range, and Constraints on Companions to Vega"

A. P. Digby, S. Hinkley, B. R. Oppenheimer, A. Sivaramakrishnan, J. P. Lloyd, **M. D. Perrin**, L. C. Roberts Jr., R. Soummer, D. Brenner, R. B. Makidon, M. Shara, J. Kuhn, J. Graham, P. Kalas, & L. Newburgh. 2006. ApJ 650, 484-496. "The Challenges of Coronagraphic Astrometry"

**M. D. Perrin**, G. Duchene, P. Kalas, & J. R. Graham. 2006, Astrophysical Journal 645, 1272. "Discovery of an Optically Thick, Edge-on Disk around the Herbig Ae Star PDS 144N"

L. C. Roberts, N. H. Turner, L. W. Bradford, T. A. ten Brummelaar, B. R. Oppenheimer, J. R. Kuhn, K. Whitman, **M. D. Perrin**, & J. R. Graham. 2005. Astronomical Journal 130, 2262-2271. "Adaptive Optics Photometry and Astrometry of Binary Stars"

R. B. Makidon, A. Sivaramakrishnan, **M. D. Perrin**, L. C. Roberts Jr., B. R. Oppenheimer, R. Soummer, & J. R. Graham. 2005. Publications of the Astronomical Society of the Pacific 117, 831-846. "An Analysis of Fundamental Waffle Mode in Early AEOS Adaptive Optics Images"

**M. D. Perrin**, J. R. Graham, P. Kalas, J. P. Lloyd, C. E. Max D. T. Gavel, D. M. Pennington, E. L. Gates 2004. Science 303, 1345-1348. "Laser Guide Star Adaptive Optics Imaging Polarimetry of Herbig Ae/Be Stars."

**M. D. Perrin**, A. Sivaramakrishnan, R. B. Makidon, B. R. Oppenheimer, J. R. Graham, 2003. Astrophysical Journal 596, 702-712. "The Structure of High Strehl Ratio Point-Spread Functions"

**Conference Proceedings and Other Publications**

**M. D. Perrin** & A. M. Ghez. 2009. AAS Meeting Abstracts 214, #401.03. "Beyond Astro 101: A First Report on Applying Interactive Education Techniques to an Astrophysics Class for Majors"

**M. D. Perrin**, G. Duchene, J. R. Graham, D. Hines, H. L. Maness, F. Menard, C. Pinte, & G. Schneider. 2009 Proceedings of the Second Subaru International Conference. "Investigating Circumstellar Disk Geometry and Dust Properties with Coronagraphic Polarimetry"

C. A. Grady, M. Harding, D. Bonfield, G. Hilton, B. Woodgate, **M. Perrin**, C. Melis, K. Peek, O. Smarr, J. Wisniewski, G. Schneider, D. Hines, K. Stapelfeldt, & D. Padgett. 2009. Bulletin of the AAS 41, 224. "Three's A Crowd: The Jets, Envelopes, And Environment Of PDS 144"

W. D. Vacca, G. H. Herbig, **M. D. Perrin**, & J. R. Graham. 2009. Bulletin of the AAS 41, 224. "A Multiwavelength Study of the Young Stellar Object MWC 778"

**M. D. Perrin**, G. Schneider, D. C. Hines, J. P. Wisniewski, C. A. Grady, & HST GO-11155 Team. 2009. Bulletin of the AAS 41, 208. "Coronagraphic Polarimetry of Circumstellar Disks Around Herbig Ae/Be Stars: Investigating Disk Properties and Dust Grain Growth with HST NICMOS"

D. R. Rodriguez, **M. D. Perrin**, & B. Macintosh. 2009. Bulletin of the AAS 41, 208. "HST NICMOS and WFPC2 Imaging of BP Piscium"

**M. D. Perrin**, J. R. Graham, & B. A. Macintosh. 2007. Bulletin of the AAS 38, 1006. "Diffraction-Limited Infrared Imaging Spectroscopy of Outflows from Young Stars"

J. Leconte, R. Soummer, B. R. Oppenheimer, S. Hinkley, D. Brenner, A. Sivaramakrishnan, J. Kuhn, **M. D. Perrin**, L. C. Roberts Jr., M. Simon, R. A. Brown, G. Chabrier, & I. Baraffe. 2007. In the Spirit of Bernard Lyot: The Direct Detection of Planets and Circumstellar Disks in the 21st Century . [“The Lyot Project: Survey Analysis”](#)

A. Sivaramakrishnan, Oppenheimer, B. R., R. Soummer, S. Hinkley, D. Brenner, J. Leconte, L. C. Roberts, **M. D. Perrin**, J. P. Lloyd, R. B. Makidon, & J. R. Kuhn. 2007. In the Spirit of Bernard Lyot: The Direct Detection of Planets and Circumstellar Disks in the 21st Century . [“The Lyot Project: Status and Results”](#)

**M. D. Perrin**, & J. R. Graham. 2006. Bulletin of the AAS 38, 1224. [“Mid-IR Observations of Herbig Ae and Be Stars”](#)

A. Sivaramakrishnan, B. R. Oppenheimer, **M. D. Perrin**, L. C. Roberts, R. B. Makidon, R. Soummer, A. P. Digby, L. W. Bradford, M. A. Skinner, N. H. Turner, & T. A. Ten Brummelaar. 2006. IAU Colloq. 200: Direct Imaging of Exoplanets: Science & Techniques 613-616. [“Scintillation and pupil illumination in AO coronagraphy”](#)

R. B. Makidon, A. Sivaramakrishnan, R. Soummer, B. R. Oppenheimer, L. C. Roberts, J. R. Graham, & **M. D. Perrin**. 2006. IAU Colloq. 200: Direct Imaging of Exoplanets: Science & Techniques 603-606. [“The Lyot Project: Understanding the AEOS Adaptive Optics PSF”](#)

L. R. Roberts Jr., L. Bradford, T. Ten Brummelaar, N. Turner, M. Skinner, E. Therkildsen, B. Oppenheimer, A. Digby, & **M. Perrin**. 2006. The Advanced Maui Optical and Space Surveillance Technologies Conference. [“The Effects of Scintillation on Non-Redundant Aperture Masking Interferometry”](#)

**M. D. Perrin**, J. R. Graham, P. Kalas, J. P. Lloyd, C. E. Max, D. T. Gavel, D. M. Pennington, & E. L. Gates. 2005. Astronomical Society of the Pacific Conference Series 343, 379. [“Adaptive Optics Polarimetry of Herbig Ae/Be Stars”](#)

J. R. Graham, **M. D. Perrin**, & C. E. Max. 2005. Bulletin of the AAS 37, 1293. [“Infrared Imaging and Polarimetry of the Crab Nebula and Pulsar using Laser Guide Star Adaptive Optics”](#)

**M. D. Perrin**, J. R. Graham, & P. Kalas. 2005. Bulletin of the AAS 37, 1293. [“LGS Polarimetry and Integral Field Spectroscopy of Herbig Ae/Be Stars”](#)

**M. D. Perrin**. 2005. Protostars and Planets V 8616. [“An Adaptive Optics Imaging Polarimetry Survey of Herbig Ae/Be Stars”](#)

B. C. Matthews, J. R. Graham, P. G. Kalas, & **M. D. Perrin**. 2005. Protostars and Planets V 8562. [“Extended CO Emission in the Environs of the HAeBe Stars LkHa 198 and LkHa 225S”](#)

**M. D. Perrin**, J. R. Graham, P. Kalas, & M. Fitzgerald. 2004. Bulletin of the AAS 36, 1553. [“A Unique Edge-on Circumstellar Disk around a Herbig Ae Star”](#)

A. Sivaramakrishnan, R. B. Makidon, R. Soummer, B. A. Macintosh, M. Troy, G. A. Chanan, J. P. Lloyd, **M. D. Perrin**, J. R. Graham, L. Poyneer, & A. I. Sheinis. 2004. Proc. SPIE 5490, 535-544. [“Coronagraph design for an extreme adaptive optics system with spatially filtered wavefront sensing on segmented telescopes”](#)

L. C. Roberts, Jr., **M. D. Perrin**, F. Marchis, A. Sivaramakrishnan, R. B. Makidon, J. C. Christou, B. A. Macintosh, L. A. Poyneer, M. A. van Dam, & M. Troy. 2004. Proc. SPIE 5490, 504-515. ["Is that really your Strehl ratio?"](#)

B. R. Oppenheimer, A. P. Digby, L. Newburgh, D. Brenner, M. Shara, J. Mey, C. Mandeville, R. B. Makidon, A. Sivaramakrishnan, R. Soummer, J. R. Graham, P. Kalas, **M. D. Perrin**, L. C. Roberts Jr., J. R. Kuhn, K. Whitman, & J. P. Lloyd. 2004. Proc. SPIE 5490, 433-442. ["The Lyot project: toward exoplanet imaging and spectroscopy"](#)

B. A. Macintosh, B. Bauman, J. Wilhelmsen Evans, J. R. Graham, C. Lockwood, L. Poyneer, D. Dillon, D. T. Gavel, J. J. Green, J. P. Lloyd, R. B. Makidon, S. Olivier, D. Palmer, **M. D. Perrin**, S. Sevenson, A. I. Sheinis, A. Sivaramakrishnan, G. Sommargren, R. Soummer, M. Troy, J. K. Wallace, & E. Wishnow. 2004. Proc. SPIE 5490, 359-369. ["eXtreme Adaptive Optics Planet Imager: overview and status"](#)

**M. D. Perrin**, J. R. Graham, P. Kalas, J. P. Lloyd, C. E. Max, D. T. Gavel, D. M. Pennington, & E. L. Gates. 2004. Proc. SPIE 5490, 309-320. ["Laser guide star adaptive optics imaging polarimetry of Herbig Ae/Be stars"](#)

B. R. Oppenheimer, A. P. Digby, M. Shara, D. Brenner, L. Newburgh, R. B. Makidon, A. Sivaramakrishnan, R. Soummer, J. R. Graham, P. Kalas, **M. D. Perrin**, J. R. Kuhn, K. Whitman, & J. P. Lloyd. 2003. Bulletin of the AAS 36, 583. ["The Lyot Project: Toward Exoplanet and Circumstellar Disk Imaging and Spectroscopy"](#)

**M. D. Perrin**, D. T. Gavel, E. L. Gates, J. R. Graham, P. Kalas, J. D. Larwood, J. P. Lloyd, C. E. Max, & D. M. Pennington. 2003. Bulletin of the AAS 35, 1367. ["Laser Guide Star Adaptive Optics Polarimetry of Three Herbig Ae/Be Stars"](#)

B. A. Macintosh, J. Graham, L. Poyneer, G. Sommargren, J. Wilhelmsen, D. Gavel, S. Jones, P. Kalas, J. P. Lloyd, R. Makidon, S. Olivier, D. Palmer, J. Patience, **M. D. Perrin**, S. Sevenson, A. Sheinis, A. Sivaramakrishnan, M. Troy, & J. K. Wallace. 2003. Proc. SPIE 5170, 272-282. ["Extreme adaptive optics planet imager: XAOPI"](#)

J. P. Lloyd, B. R. Oppenheimer, A. P. Digby, L. Newburgh, D. Brenner, M. Shara, J. R. Graham, P. Kalas, **M. D. Perrin**, A. Sivaramakrishnan, R. Makidon, J. Kuhn, K. Whitman, & L. C. Roberts Jr.. 2003. ESA SP-539: Earths: DARWIN/TPF and the Search for Extrasolar Terrestrial Planets 513-518. ["The Lyot project: toward exoplanet images and spectroscopy"](#)

B. A. Macintosh, J. R. Graham, G. Duchene, S. Jones, P. Kalas, J. Lloyd, R. B. Makidon, S. Olivier, D. Palmer, **M. D. Perrin**, L. Poyneer, A. Sheinis, A. Sivaramakrishnan, S. Sevenson, G. Sommargren, M. Troy, & J. K. Wallace. 2003. Bulletin of the AAS 35, 922. ["Direct detection of extrasolar planets with the eXtreme Adaptive Optics Planet Imager"](#)

A. Sivaramakrishnan, P. E. Hodge, R. B. Makidon, **M. D. Perrin**, J. P. Lloyd, E. E. Bloemhof, & B. R. Oppenheimer. 2003. Proc. SPIE 4860, 161-170. ["The adaptive optics point-spread function at moderate and high Strehl ratios"](#)

**M. D. Perrin**, J. R. Graham, M. Trumpis, J. Kuhn, K. Whitman, R. Coulter, J. P. Lloyd, and L. C. Roberts, Jr. 2003. Proceedings of the Air Force AMOS Technical Conference. ["First light with the Kermit Infrared Camera"](#)

J. R. Graham, B. Macintosh, A. Ghez, P. Kalas, J. Lloyd, R. Makidon, S. Olivier, J. Patience, **M. D. Perrin**, L. Poyneer, S. Sevenson, A. Sheinis, A. Sivaramakrishnan, M. Troy, J. Wallace, &

J. Wilhelmsen. 2002. Bulletin of the AAS 34, 1138. [“Experimental design for the eXtreme Adaptive Optics Planet Imager \(XAOPI\)”](#)

B. Macintosh, J. R. Graham, A. Ghez, P. Kalas, J. Lloyd, R. Makidon, S. Olivier, J. Patience, **M. D. Perrin**, L. Poyneer, S. Sevrerson, A. Sheinis, A. Sivaramakrishnan, M. Troy, J. Wallace, & J. Wilhelmsen. 2002. Bulletin of the AAS 34, 1137. [“Extreme Adaptive Optics Planet Imager”](#)

**M. D. Perrin**, J. P. Lloyd, P. Kalas, & J. R. Graham. 2002. Bulletin of the AAS 34, 1129. [“Design and Calibration of a Near IR Adaptive Optics Imaging Polarimeter for Lick Observatory”](#)

P. F. Bloser, T. Narita, J. A. Jenkins, **M. D. Perrin**, R. Murray, & J. E. Grindlay. 2002. Proc. SPIE 4497, 88-99. [“Balloon flight background measurement with actively-shielded planar and imaging CZT detectors”](#)

T. Narita, J. E. Grindlay, J. A. Jenkins, **M. D. Perrin**, D. Marrone, R. Murray, & B. Connell. 2002. Proc. SPIE 4497, 79-87. [“Design and preliminary tests of a prototype CZT imaging array”](#)