

## Andrea M. Ghez

**Contact Information:** Department of Physics and Astronomy  
430 Portola Plaza  
University of California Los Angeles  
Los Angeles, CA 90095-1547  
(310)206-0420, ghez@astro.ucla.edu  
<http://www.astro.ucla.edu/~ghez>

**Education:** **Ph.D., Physics** Sep 1992  
California Institute of Technology  
**B.S., Physics** Jun 1987  
Massachusetts Institute of Technology

**Professional Experience:** **Full Professor of Physics & Astronomy** 2000 - present  
University of California Los Angeles  
**Associate Professor of Physics & Astronomy** 1997 - 2000  
University of California Los Angeles  
**Assistant Professor of Physics & Astronomy** 1994 - 1997  
University of California Los Angeles  
**Hubble Postdoctoral Research Fellow** 1992 - 1993  
University of Arizona, Steward Observatory

**Awards and Honors:** Sackler Lecturer, UC Berkeley 2011  
Whitford Lecturer, University of Wisconsin 2010  
Lauren B. Leichtman & Arthur E. Levine Endowed Chair 2009-  
Bruno Rossi Lecturer in Astrophysics (MIT) 2009  
First Eddington Lecturer, Cambridge University/RAS 2009  
MacArthur Fellowship 2008  
Helen Hogg Distinguished Vistorship 2008  
UCLA Acad. Adv. Program Faculty Recognition Award 2007  
Sackler Lecturer, Leiden University 2007  
Sackler Lecturer, Harvard University 2007  
Aaronson Award, University of Arizona 2006  
National Academy of Sciences, elected 2004  
American Academy of Arts & Sciences, elected 2004  
Sackler Prize, University of Tel Aviv 2004  
UCLA Gold Shield Prize 2004  
UCLA Faculty Research Lecturer Award 2003  
Maria Goeppert-Mayer Award, American Physical Society 1999  
Newton Lacy Pierce Prize, American Astronomical Society 1998  
Outstanding Teaching Award, UCLA Physics Department 1997,1998,2005,2010  
Packard Fellowship 1996  
Sloan Fellowship 1996

<b>National Service:</b>	<i>National Research Council Committees</i>	
<i>post 2001</i>	Astronomy and Astrophysics Decadal Survey Panels	
	Optical/IR from the Ground Panel	1999-2000, 2009-2010
	Extra-Solar Planets Cross-Panel	1999-2000
	Astronomy Decadal Survey Chair Search, member	2008
	Board on Physics and Astronomy, member	2004 - 2010
	Committee on Astronomy and Astrophysics, member	2000-2004
	<i>National Academies of Science Committees</i>	
	Astronomy Nominating Committee, co-chair	2007-2010
	Class Membership Committee, member	2010-2011
	James Craig Watson Medal Selection, member	2009, 2011
	Henry Draper Medal Selection, member	2008
	Award for Scientific Reviewing Selection, member	2007
	Representative member of USNC-IAU Committee	2005 - 2007
	<i>American Astronomical Society Committees</i>	
	Henry Norris Russell Lectureship Selection, member	2009, 2011
	Henry Norris Russell Lectureship Selection, chair	2010
	Warner/Pierce Prize Committee, member	2004-2005
	Warner/Pierce Prize Committee, chair	2006
	<i>NASA Committees</i>	
	NASA's SPITZER Space Telescope Time Allocation, chair	2005
	Hubble Post-doctoral Fellowship Selection, member	2004
	SIRTF Mission Science Strategy Review Board, member	2003
	NASA Keck Interferometry Science Steering, member	1996 - 2003
	Michelson Postdoctoral Fellowship Selection, member	1999, 2002
	<i>National Science Foundation Committees</i>	
	Center for Adaptive Optics (CfAO), Science & Technology Center	
	Associate Director for Astronomical Science	Nov 1999 - 2009
	<i>Other National Astronomy Related Organization Committees</i>	
	Am. Acad. of Arts & Science Astro. Nominating Comm., member	2004-5,2007,2009,2011
	General Member of the Aspen Center for Physics	2004 - 2008
	Aspen Center for Physics Colloquium Committee, member	2008
	Aspen Center for Physics Summer Prog. Selection Comm., member	2005

<b>University of California Service:</b> <i>post 2001</i>	<i>Keck Observatory Committees</i>	
	Science Steering Committee, member	2010 - present
	Strategic Planning Committee	2008
	University of California Time Allocation, member	1999 - 2008
	<i>Thirty Meter Telescope Committees</i>	
	Science Advisory Committee, member	1999 - present
	IRIS Instrument Working Group, member	2008 - present
	Instrument Feasibility Proposal Review, member	2005
	<i>UC System-wide Committees</i>	
	Research Strategies WG of UC Commission on the Future	2009 - 2010
	UC Astronomy Task Force, member	2011
	Search Committee for the Director of UC Observatories, member	2005-2006
	<i>UCLA Campus-wide Committees</i>	
	Vice Provost for Diversity & Faculty Development Search	2010
	EVC & Provost Advisory Search Committee	2008
	Provost's Committee on Faculty Work/Life Issues	2008-2009
	Faculty Welfare Subcommittee on Childcare, member	2006-2008
	Committee on Faculty Research Lectureship, chair	2007-2008
	Committee on Faculty Research Lectureship, member	2006
	Gold Shield Faculty Prize Selection Committee, member	2006 - 2007
	Early Care and Education Advisory Board, member	2005-present
	UCLA Lab School Advisory Board, member	2010 - present
	Research Advisory Council, member	2004-5
	Physical Sciences Dean Search Committee	2000-2001
	<i>UCLA Department of Physics and Astronomy</i>	
	Astronomy Colloquium Committee	2008-2012
	Physics Colloquium Committee	2010-2012
	Policy & Appointments Committee, member	2000 - 2004, 2007, 2010-11
	Building Inauguration Committee, member	2004
	Faculty Search Committees	
	Knopoff Term chair, member	2011-2012
	Extra-galactic Search, co-chair	2006-2007
	Origins of Solar Systems Search, chair	2000-2001
	Computing Resources Manager Interview Committee, member	2006-7
	Physics & Astronomy Computer Committee, member	2007, 2009-2010
	Astronomy Division Graduate Admissions, chair	2004
	Astronomy Division Graduate Admissions, chair	1996-2004 (except 1998 & 2002)
	Astronomy Division Graduate Admissions, member	2002
	Graduate Recruitment Committee, member	2004-2005, 2007
	<i>UCLA Institute for Geophysics and Planetary Sciences</i>	
	Futures Committee	2007 - 2008
	Research Staff Committee, member	1999 - 2002
	Education & Fellowship Committee, member	2003 - 2004, 2008
	Education & Fellowship Committee, chair	2005 - 2007
	Merit Increase Committee, member	2004
	Faculty Search (G1), member	2008

## Research Advising:

### *Post Doctoral Researchers*

Will Clarkson	2008-2010
Nate McCrady	2008-2009
Leo Meyer (DFG Fellow)	2008-2009
Jörg-Uwe Pott (Keck/UCLA)	2007-2009
Marshall Perrin (NSF Fellow)	2007-2010
Elise Furlan (NRC Fellow)	2006-2008
Andrea Stolte	2006-2008
Gaspard Duchene	2000-2004
Lisa Prato	1998-2000

### *Graduate Students (PhD Projects)*

Jennifer Patience	MS 1995, PhD 1999
Russel White	MS 1995, PhD 1999
Angelle Tanner	MS 1998, PhD 2004
Caer McCabe	MS 1999, PhD 2004
Seth Hornstein	MS 2002, PhD 2006
Jessica Lu	MS 2005, PhD 2009
Quinn Konopacky	MS 2005, PhD 2009
Tuan Do	PhD 2010
Sylvana Yelda	MS 2008, (PhD 2012)

### *Graduate Students (MS Projects only)*

Beth Klein	MS 1995
Mike Berkovitch	MS 1996
Suvi Gezari	MS 2001
Shelley Wright	MS 2004
Marc Rafelski	MS 2006
Breann Sitarski	(MS 2012)
Kim Phifer	(MS 2013)
Anna Boehle	(MS 2013)
Michelle Kislak	(MS 2013)

### *Undergraduate Students*

Tracy Beck	1994-1995
Marlon Jimenez	1996
Mia Smith	1996
Jason Weis	1997
Nairn Baliber	1997-1998
Whitney Raas	1998-2000
David Sand	1997-2000
Ted Kremenek	1998-2001
Louis Levenson	2000-2001
Michele Carpenter	2002
Amanda Young (UCSC)	2002
Priya Sheth	2002 2003
Hamadi Macintosh	2003
Fabio Altenbach	2003-2005
Javiera Guedes (UCB)	2004
Lia Corrales (Harvey Mudd)	2005
Jill Naiman	2005-2006
James Dunn	2006-2008
Hal Cambier (University of Oregon)	2006
Ryan Trainor (UC Irvine)	2007
Claire Dorman (UC Berkeley)	2008
Kim Phifer (Butler University)	2009
Anna Boehle (Smith)	2010
Josefa Baker	2010
Nara Higano (Gustavus Adolphus)	2011
Ruizhu Chen (Nanjing University)	2011

### *High School Students*

Simone Kleine (Marlborough)	2002
Katie Love-Cooksey (Marlborough)	2005-2006
Christopher Ballard (Harvard-Westlake)	2007
Stephanie Lega (Van Nuys)	2009
Ryan Yoo (Homeschooled/UCLA)	2010-2011

**Invited Lectures** (post Jan 2009):

*Scientific Meetings:*

- 01/06/09 American Astronomical Society Meeting, Plenary Talk, Long Beach, CA
- 03/13/09 Royal Astronomical Society Meeting, London, UK
- 04/03/09 Intermediate-Mass Black Holes: From First Light to Galactic Nuclei, Irvine, CA
- 06/10/09 American Astronomical Society Special Session, "Stellar Populations and the Galactic Center with AO," Pasadena, CA
- 7/17/09 Twelfth Marcel Grossmann Meeting, "On Recent Developments in Theoretical and Experimental General Relativity, Astrophysics, and Relativistic Field Theories," Plenary Talk, Paris, France
- 10/12/09 Optical Society of America Frontiers in Optics Meeting, Plenary Talk, San Jose, CA
- 11/08/09 NRC, Board on Physics and Astronomy, Irvine, CA
- 10/12/09 Stars and Singularities, Physics and dense cusps and massive black holes, Weizmann Institute of Science, Rehovot, Israel
- 02/16/10 Formation and Evolution of Black Holes, Aspen Center for Physics, Aspen, CO
- 05/10/10 Dynamics from the Galactic Center to the Milky Way Halo, 6th Harvard-Smithsonian Conference on Theoretical Astrophysics, Cambridge, MA
- 06/28/10 8th International LISA Symposium opening session talk, Stanford, CA
- 07/07/10 19th International Conference on General Relativity and Gravitation, Plenary talk, Mexico City, Mexico
- 02/07/11 IEEE Conference, Evening Lecture, Big Sky Montana
- 05/21/11 MacArthur Fellows Weekend, The Johnson Foundation at Wingspread

*Departmental Colloquia:*

- 02/19/09 University of Michigan, Department of Astronomy
- 03/12/09 Institute of Astronomy, Cambridge University, UK
- 04/14/09 Princeton, Department of Astronomy
- 09/15/09 MIT, Bruno Rossi Lecturer in Astrophysics, Cambridge, MA
- 11/13/09 Cal State LA, Leon Pape Memorial Lecture, Los Angeles, CA
- 11/16/09 USC, Department of Physics, Los Angeles, CA
- 03/23/10 University of Wisconsin, Whitford Lecture, Madison, WI
- 10/23/10 University of California San Diego, Department of Physics
- 12/07/10 NASA Goddard Colloquium
- 12/08/10 Space Telescope Science Institute Colloquium
- 03/31/11 University of California Berkeley, Department of Astronomy
- 04/13/11 University of Chicago, Department of Astronomy
- 04/14/11 Ohio State University, Department of Astronomy
- 11/16/11 University of California Santa Cruz, Department of Astronomy

*Public/General Talks:*

- 02/20/09 Astronomy of the 21st Century Lecture Series, University of Michigan
- 03/26-27/09 Keck Observatory, Evening Fundraising Lecture Series, Kona, Hawaii
- 04/16/09 Lehigh University's 2009 Academic Symposium: A Tradition of Excellence
- 04/24/09 UCLA Chancellor's Associates, Bruin Woods, Lake Arrowhead, CA
- 07/21/09 TED Global 2009 Conference "Substance of Things Unseen," Oxford, UK
- 11/04/09 UCLA Alumni Academy, Los Angeles, CA

11/20/09 City of Orange Rotary Club (Larry Tannas), Orange, CA  
02/18/10 Aspen Center for Physics Public Lecture, Wheeler Opera House  
05/26/10 UCLA Women in Astronomy: A Look at the Past, Present, and Future, Los Angeles, CA  
06/04/10 First Fridays public lecture, Natural History Museum, Los Angeles, CA  
09/20/10 UCLA Law School, Faculty Monday Colloquium, Los Angeles, CA  
12/09/10 Carnegie Capital Science Evening Lecture, Washington, DC  
03/29/11 UCLA Chancellor's Associates, Montecito, CA  
03/30/11 Sackler Evening Public Lecture, Berkeley, CA  
04/09/11 UCLA Bruin Day, Chancellor's Welcome session  
04/15/11 Science Lecture, Otterbein University, Columbus OH  
04/16/11 Ohio Academy of Sciences, Columbus, OH  
10/19/11 UCLA External Affairs All Staff Meeting, Los Angeles, CA  
10/24/11 Griffith Observatory, Los Angeles, CA  
10/28/11 UCLA Parents' Weekend, Los Angeles, CA  
11/12/11 UCLA Explore Your Universe! Los Angeles, CA  
11/19/11 UCLA Department of Molecular and Medical Pharmacology Retreat, Huntington Beach, CA

#### **Other Public Outreach Activities :**

##### *Featured in Documentaries & Other Television Productions:*

Discovery, "The Runaway Universe" (Tom Lucas) (A NOVA Production by Thomas Lucas Productions, Inc for WGBH/Boston and Sverigies Television)  
The Learning Channel - "Live From a Black Hole" (Geoff Haines-Stiles)  
NHK TV Japan, "Space Millennium - Black Hole and Galaxy" (Yasue Drabbe & Yoshi Yuki)  
BBC1/The Learning Channel, "Space - Black Holes" (Richard Burke-Ward & Jeremy Turner)  
BBC "Horizon - Supermassive Black Holes" (Zoe Heron)  
BBC Science "Black Holes" (Annabel Gillings)  
Discovery, "Extreme Hawaii" (Laura Netscher & Lisa Sonne)  
KBS (Korean Public Broadcast TV) "Science 21" (2003)  
Earth & Sky Radio Series (Jorge Salazar, July 2005)  
Nova, "Monster of the Milky Way (Tom Lucas, Oct 31 2006)  
History Channel, "The Universe" (Aug 20, 2007)  
History Channel, "Einstein and The Two Eclipses" (Nov 17 2008)  
"Here.Now.UCLA" TV Spot for UCLA (Sept 25 2008)  
"Known Universe", a National Geographic Program (Coll Metcalfe, April 2010)  
"How the Universe Works", a 9 part documentary series for the Discovery Channel (Peter Chinn & Zoe Elliott), first aired May 25 2010

##### *Featured in Musuem Exhibits and Shows:*

Addler Planetarium, video interview and material in Museum exhibit (Grace Wolfe)  
Planetarium show "Black Holes: The Other Side of Infinity produced by the Denver Museum of Nature and Science in association with the PBS science series, NOVA (2006)  
Griffith Observatory exhibit (opened 2006, Los Angeles, CA)  
Ontario Science Center exhibit (opened July 2007, Toronto Canada)  
National Academy of Sciences Keck Building exhibit

Traveling museum exhibition about black holes created by the Smithsonian Astrophysical Observatory

*Selected Features in Popular Magazine/Newspaper/Web Articles:*

Story “The Mysterious Middle of the Milky Way” in Discover magazine Nov 1998, by David Freedman

Featured on NSF’s “Nifty 50” website, a list of 50 NSF-funded inventions, innovations and discoveries to celebrate their 50th Anniversary (April 2000)

Featured in “ThePosterProject, Visualizing Women in Science, Mathematics and Engineering,” (P. D. Kivelson)

Selected as top 20 scientists in the country under 40 by Discover magazine Oct 2000

Selected as top 10 2002 science results by Science magazine Dec 2002

Story “The Milky Way’s Dark, Starving Pit” in Science magazine May 2003, by Robert Irion

Story “Mystery in the Middle Uncovering a stellar riddle at the Milky Way’s core” in Science News June 2003, by Ron Cohen

Story “Shaking Up Black Hole Theory” in LA Times September 2003

Story “Changing Faces of Astronomy” on ScienceCareers.org (January 2006; [http://sciencecareers.sciencemag.org/career\\_development/previous\\_issues/articles/2006\\_01\\_20/changing\\_faces\\_of\\_astronomy](http://sciencecareers.sciencemag.org/career_development/previous_issues/articles/2006_01_20/changing_faces_of_astronomy))

Featured on My Hero website (by J. L. Lee, 2006; <http://myhero.com/myhero/hero.asp?hero=A.M.Ghez.06>)

Featured in Washington Post p. 1 article by Marc Kaufman “Huge Black Holes May Hold Keys to Galaxy Formation” (Oct 31 2007)

Featured in cover story of Smithsonian Magazine “Homing in on Black Holes” by Robert Irion (April 2008)

Featured in “Build A Model Solar System”, a UK magazine, Vol 49, p. 23 (April 2009)

Featured in “The Mysteries of the Cosmos”, a three-part event sponsored by the NSF, the Thirty Meter Telescope, and DISCOVER; part one - a live event panel discussion on 1/30/09 at Beckman Auditorium, Caltech; part two - an article in 2009 May issue of Discover magazine; part three - on-line videos (<http://discovermagazine.com/events/mysteries-of-the-cosmos/>)

Interview in article on Edutopia.org (March 2009)

Featured in “Astro Confidential” piece in 2009 August issue of Astronomy magazine (editor Karri Ferron)

Included in Timothy Ferris’s article about the evolution of telescopes for 2009 July issue of National Geographic magazine

Featured in Robert Naeye’s piece “Milky Way’s Central Monster Measured,” for Sky & Telescope (2008 August)

Featured in 2010 November issue of Current Biography

Included in “UCLA: The First Century” (Oct 2011)

*Research in Textbooks:*

“Principles of Astrophysics” by Marc Kutner, 1st edition, Cambridge UP, Undergraduate Introductory Astronomy Textbook for Science Majors

“The Cosmos: Astronomy in the New Millenium” by Pasachoff & Filippenko, 2nd edition, Hartcourt College Publishers, Undergraduate Introductory Text for Non-Science Majors

“My Astronomy: From the Earth to the Universe” by Pasachoff, 6th edition, Saunders College Publishing, Undergraduate Introductory Text for Non-Science Majors

- “Gravity: An Introduction to Einstein’s General Relativity” by Hartle, 1st edition, Addison-Wesley, Undergraduate General Relativity Textbook
- “The Milky Way System” by Kuehn, S. Hirzel Verlag Stuttgart, Popular Science
- “Astronomy Today” by Chaisson & McMillan, 4th edition, Prentice Hall, Undergraduate Introductory Text for Non-Science Majors
- “Explorations: An Introduction to Astronomy, Stars First” by Arny, 1st edition, McGraw-Hill, Undergraduate Introductory Text for Non-Science Majors
- “Understanding the Universe: An Introduction to Astronomy” by Alex Filippenko, 2007 edition, The Teaching Company, Undergraduate Introductory DVD course for Non-Science Majors
- “Astrophysics in a Nutshell” by Dan Maoz, 1st edition (2007), Princeton University Press, Upper division undergraduate introduction to astrophysics for physics majors
- “Astronomy Notes” By Nick Strobel, 1st edition, Primis/McGraw-Hill, Undergraduate Introductory Text, hardcopy and on-line (<http://www.astronomynotes.com>) versions
- “Relativity, Astrophysics and Cosmology” by Radoje Belusevic, 1st edition, Wiley 2008 a comprehensive introduction to modern astrophysics and cosmology for advanced undergraduates or graduate students
- “Gravity’s Fatal Attraction: Black Holes in the Universe” by Mitch Begelman and Martin Rees, 2nd edition, Cambridge University Press (2009)
- “High Energy Astrophysics” by Malcolm Longair, 3rd edition Cambridge University Press 2011
- “What if the Earth Had Two Moons? And Nine Other Thought-Provoking Speculations on the Solar System” by Neil F. Comins, St. Martin’s Press, 1st ed. (2010)
- “University Physics” by Young and Freedman, Pearson Science 13th ed. (2011)
- “High Energy Astrophysics” by M. Longair, 3rd ed Cambridge University Press (2011)
- “General Relativity without Calculus” by Jose Natario, Springer (2011)

## Andrea M. Ghez

### Publication List:

1. Nakajima, T., Kulkarni, S., Gorham, P., Ghez, A., Neugebauer, G., Oke, J.B., Prince, T., and Readhead, A.C.S., 1989, "Diffraction Limited Imaging II: Optical Aperture Synthesis Images of Two Binary Stars," *AJ*, 97, 1510
2. Gorham, P., Ghez, A., Kulkarni, S., Nakajima, T., Neugebauer, G., Oke, J.B., Prince, T., and Readhead, A.C.S. 1989, "Diffraction Limited Imaging III: 30 Milliarcsecond Closure Phase Imaging of Six Binary Stars With the Hale 5 m Telescope," *AJ*, 98, 1783
3. Gorham, P., Ghez, A., Haniff, C., and Prince, T. 1990, "Recovery of Diffraction-Limited Object Autocorrelations from Astronomical Speckle Interferograms Using the CLEAN Algorithm," *AJ*, 100, 294
4. Ghez, A., Kulkarni, S., Matthews, K., Neugebauer, G., Prince, T., and Weir, N. 1990, "Infrared Speckle Imaging at Palomar," in proceedings of S.P.I.E. Symposium on Astronomical Telescopes and Instrumentation for the 21st Century, 1237, 249
5. Weir, N., Ghez, A., Kulkarni, S., Matthews, K., and Neugebauer, G. 1990, "Infrared Non-redundant Mask Imaging at Palomar," in proceedings of S.P.I.E. Symposium on Astronomical Telescopes and Instrumentation for the 21st Century, 1237, 274
6. Ghez, A., Neugebauer, G., Gorham, P., Haniff, C., Kulkarni, S., Matthews, K., Koresko, C., and Beckwith, S. 1991, "Diffraction Limited Infrared Images of the Binary Star T Tauri," *AJ*, 102, 2066
7. Koresko, C., Beckwith, S., Ghez, A., Matthews, K., and Neugebauer, G. 1991, "An Infrared Companion to Z Canis Majoris," *AJ*, 102, 2073
8. Haniff, C., Ghez, A., Gorham, P., Kulkarni, S., Matthews, K., and Neugebauer, G. 1991, "Optical Aperture Synthetic Images of the Photosphere and Molecular Atmosphere of Mira," *AJ*, 103, 1662
9. Gorham, P., Ghez, A., Haniff, C., Kulkarni, S., Matthews, K., and Neugebauer, G. 1991, "A Search For T Tauri's Optical Companion Star," *AJ*, 103, 953
10. Ghez, A., Neugebauer, G., and Matthews, K. 1992 "A Two Dimensional Near-Infrared Speckle Imaging Survey of T Tauri Stars in Taurus and Ophiuchus," in *Complementary Approaches to Double and Multiple Star Research*, IAU Colloquium No. 135, p. 1
11. Koresko, C., Beckwith, S., Ghez, A., Matthews, K., and Herbst, T. 1993, *AJ*, 105, 1481
12. Simon, M., Ghez, A., and Leinert, Ch, 1993, "Multiplicity and the Ages of the Stars in the Taurus Star Forming Region," *ApJLett*, 408, L33
13. Ghez, A. M., Neugebauer, G., and Matthews, K. 1993, "The Frequency of T Tauri Companion Stars," *PASP*, 105, 1
14. Ghez, A. M., Neugebauer, G., and Matthews, K. 1993, "The Multiplicity of T Tauri Stars in the Taurus-Auriga and Ophiuchus-Scorpius Star Forming Regions: A 2.2  $\mu\text{m}$  Imaging Survey," *AJ*, 106, 2005
15. Ghez, A. M., McCarthy, D. W., Weinberger, A. J., Neugebauer, G., Matthews, K. 1994, "A Near Infrared Speckle Imaging Study of T Tauri Stars: Orbital Motion," in "Infrared Astronomy With Arrays: The Next Generation", *Experimental Astronomy*, ed. I. S. McLean, p. 449
16. Lloyd-Hart, M., Colucci, D., Wittman, D., McLeod, B., Ghez, A., McCarthy, D., Dekany, R., and Angel, R. 1993, "Diffraction Limited K Band Imaging at the Multiple Mirror Telescope with Adaptive Optics," in proceedings of S.P.I.E. Symposium on Active and Adaptive Optical Components and Systems II, vol. 1920, p. 338

17. Ghez, A. M., Emerson, J. P., Graham, J. R., Meixner, M., and Skinner, C. J. 1994, "10  $\mu\text{m}$  Imaging of UZ Tau: Evidence For Circumstellar Disk Clearing Due to a Close Companion Star," *ApJ*, 434, 707
18. Colucci, D., Lloyd-Hart, M., Wittman, D., Angel, R., Ghez, A., McCleod-B. 1994, "A Reflective Shack-Hartmann Wave-Front Sensor For Adaptive Optics," *PASP*, 106, 1104
19. Ghez, A. M., McCarthy, D. W., Jr., Weinberger, A. J., Neugebauer, G., and Matthews, K. 1994, "Close Companions to T Tauri Stars: Abundant and Perturbing," in "Interacting Binary Stars", ASP Proceedings, ed. A. Shafter
20. Simon, M., Ghez, A. M., Leinert, Ch., Cassar, L., Chen, W. P., Howell, R. R., Jameson, R. F., Matthews, K., Neugebauer, G., & Richichi, A. 1995, "A Lunar Occultation & Direct Imaging Survey of Multiplicity in the Ophiuchus and Taurus Star Forming Regions" *ApJ*, 443, 625
21. Jura, M., Ghez, A. M., White, R. J., McCarthy, D. W., Smith, R. C., and Martin, P. G. 1995, "The Fate of the Solid Matter Orbiting HR 4796A," *ApJ*, 445, 451
22. Ghez, A. M., Weinberger, A. J., Neugebauer, G., Matthews, K., and McCarthy, D. W. 1995, "Speckle Imaging Measurements of the Relative Tangential Velocities of the Components of T Tauri Binary Stars," *AJ*, 110, 753
23. Ghez, A. M. and Cohen, J., 1995, "You Can Be A Woman Astronomer," Cascade Pass, Inc. 1-880599-17-1
24. Liu, M. C., Graham, J. R., Ghez, A. M., Meixner, M., Skinner, C. J., Keto, E., Ball, R., Arens, J. F., & Jernigan, J. 1996, *ApJ*, "Mid-Infrared Imaging of Young Stellar Objects," 461, 334
25. Ghez, A. M. 1996, "Young Binary Stars," invited review article in proceedings of NATO/ASI on Evolutionary Processes in Binary Stars, 477, 1
26. Matthews, K., Ghez, A. M., Weinberger, A. J., and Neugebauer, G. 1996, "The First Diffraction-Limited Images from the W. M. Keck Telescope," *PASP*, 108, 615
27. Klein, B. K., Ghez, A. M., Morris, M., and Becklin, E. E. 1996, "2.2  $\mu\text{m}$  Keck Images of the Galaxy's Central Stellar Cluster at 0.''05 Resolution," in the 4th CTIO/ESO Workshop on "The Galactic Center"
28. Padgett, D. L., Strom, S. E., and Ghez, A. M. 1997, "Hubble Space Telescope WFPC2 Observations of the Binary Fraction Among Pre-Main Sequence Cluster Stars in Orion," *ApJ*, 477, 705
29. Ghez, A. M., McCarthy, D. W., Patience, J.L., and Beck, T.L. 1997, "The Multiplicity of T Tauri Stars in Southern Star Forming Regions," *ApJ*, 481, 378
30. Marcy, G., Butler, P., Williams, E., Bildsten, L., Graham, J.R., Ghez, A. M., and Jernigan, G. 1997, "The Planet around 51 Pegasi," *ApJ*, 481, 926
31. Ghez, A. M., White, R. J., and Simon, M. 1997 "High Spatial Resolution Imaging of Pre-Main-Sequence Binary Stars: Resolving the Relationship Between Disks and Close Companions," *ApJ*, 490, 353
32. Ghez, A. M. 1998 "Pre-Main Sequence Binaries: Formation, Evolution, and Interaction with Disks," invited review article in ORIGINS, Proceedings of the International Conference, Astronomical Society of the Pacific Conf. Series, Vol. 148, eds. C.E. Woodward, J.M. Shull, and H.A. Thronson, Jr.
33. Patience, J. L., Ghez, A. M., Ried, I. N., Weinberger, A., and Matthews, K. 1998 "The Multiplicity of the Hyades and its Implications for Binary Star Formation and Evolution", *AJ*, 115, 1972
34. Ghez, A. M., Klein, B. L., Morris, M., and Becklin, E. E. 1998, "High Proper Motions in the Vicinity of Sgr A\*," in proceedings of IAU Symp. No. 184 "The Central Region of the Galaxy

- and Galaxies”, ed. Y. Sofue
35. Becklin, E. E., Morris, M., Figer, D., Ghez, A. M., Puetter, R., and Jones, B. 1998, “12.5  $\mu\text{m}$  Imaging of Sgr A West With the Keck Telescope,” in proceedings of IAU Symp. No. 184 “The Central Region of the Galaxy and Galaxies”, ed. Y. Sofue
  36. Figer, D. F., Najjarro, F., Morris, M., McLean, I. S., Geballe, T. R., Ghez, A. M., and Langer, N. 1998, “The Pistol Star,” *ApJ*, 506, 384
  37. Ghez, A. M., Klein, B. L., Morris, M., and Becklin, E. E. 1998, “High Proper Motion Stars in the Vicinity of Sgr A\*: Evidence for a Supermassive Black Hole at the Center of Our Galaxy,” *ApJ*, 509, 678
  38. Ghez, A. M., Klein, B. L., Morris, M., and Becklin, E. E. 1998, “High Proper Motion Stars in the Vicinity of Sgr A\*: Evidence for a Supermassive Black Hole at the Center of Our Galaxy,” to appear in “Observational Evidence for Black Holes in the Universe,” ed. S. K. Chakrabarti
  39. Wood, K., Crosas, M., and Ghez, A. M. 1999, “GG Tauri’s Circumbinary Disk: Models for Near Infrared Scattered Light Images and Molecular Line Profiles,” *ApJ*, 516, 335
  40. Gibbard, S. G., Macintosh, B., Gavel, D., Max, C. E., de Pater, I., Ghez, A. M., Young, E. F., and McKay C. P. 1999, “Titan: High-Resolution Speckle Images from the Keck Telescope” *Icarus*, 139, 189
  41. Ghez, A. M., Morris, M., and Becklin, E. E. 1999, “Dynamical Evidence for a Supermassive Black Hole at the Center of the Milky Way,” Invited review in A.S.P. proceedings of “Galaxy Dynamics” eds. J. Sellwood and D. Merritt, Vol. 182, p. 24
  42. White, R. J., Ghez, A. M., Reid, I. N., and Schultz, G. 1999, “A Test of Pre-Main Sequence Evolutionary Models Across the Stellar/Substellar Boundary Based on Spectra of the Young Quadruple GG Tau,” *ApJ*, 520, 811
  43. Morris, M., Ghez, A. M., and Becklin, E. E. 1999, “The Galactic Center Black Hole: Clues for the Evolution of Black Holes in Galactic Nuclei,” *Advances in Space Research*, 23, 959
  44. Tanner, A. M., Ghez, A. M., Morris, M., and Becklin, E. E. 1999, “Spatially Resolved Dust Shells in the Central Parsec,” in “The Central Parsecs of the Galaxy,” ASP Conf. Series, Vol. 186, p. 351, eds. H. Falcke et al.
  45. Cotera, A., Ghez, A. M., Stolovy, S., Morris, M., and Becklin, E. E. 1999, “Mid-Infrared Observations of Sgr A West from Keck,” in “The Central Parsecs of the Galaxy,” ASP Conf. Series, Vol. 186, p. 240, eds. H. Falcke et al.
  46. Ghez, A. M., Morris, M., and Becklin, E. E. 1999, “High Proper Motion Stars in the Vicinity of Sgr A\*,” in “The Central Parsecs of the Galaxy,” ASP Conf. Series, Vol. 186, p. 18, eds. H. Falcke et al.
  47. Beck, T. L., Simon, M., Ghez, A. M., Prato, L., & Howell, R. R. 2000, “The Near IR and Ice-band Variability of T Tau and Haro 6-10,” in “Birth & Evolution of Binary Stars”, Poster Proceedings of IAU Symposium No. 200 on The Formation of Binary Stars, eds. B. Reipurth & H. Zinnecker, p. 51.
  48. Prato, L., Ghez, A. M., Pina, R. K., Telesco, C. M., Fisher, R., Wizinowich, P., Lai, O., Acton, D. S., and Stomski, P., “Keck Diffraction-Limited Imaging of the Young Quadruple Star System HD 98800,” in “Birth & Evolution of Binary Stars”, Poster Proceedings of IAU Symposium No. 200 on The Formation of Binary Stars, eds. B. Reipurth & H. Zinnecker, p. 65.
  49. McCabe, C. and Ghez, A. M. 2000, “A Detailed Study of the GG Tau Circumbinary Disk,” in “The Formation of Binary Stars,” Poster Proceedings of IAU Symp. 200, eds. B. Mathieu and H. Zinnecker, p. 80

50. Telesco, C. M., Fisher, R. S., Pina, R. K., Knacke, R. F., Dermott, S. F., Wyatt, M. C., Grogan, K., Ghez, A. M., Prato, L., Hartmann, L. W., and Jayawardhana, R. 2000, "Deep 10 and 18 micron Imaging of the HR4796A Circumstellar Disk: Transient Dust Particles and Tentative Evidence for a Brightness Asymmetry" *ApJ*, 530, 329
51. Wizinowich, P. Acton, D. S., Shelton, C., Stomski, P., Gathright, J., Ho, K., Lupton, W., Tsubota, K., Lai, O., Max, C., Brase, J., An, J., Avicola, K., Olivier, S., Gavel, D., Macintosh, B., Ghez, A., and Larkin, J. 2000, "Adaptive Optics at the Keck Telescope: A New Era of High Angular Resolution Imagery," *PASP*, 112, 315
52. Mathieu, R. D., Ghez, A. M., Jensen, E. L. N., and Simon, M. 2000, "Young Binary Stars," in "Protostars and Planets IV," Tucson, University of Arizona Press, eds. Mannings, Boss, and Russell, p. 703
53. Tanner, A. M., Ghez, A. M., Morris, M., Becklin, E. E., Cotera, A., Ressler, M. E. 2000, "Is the galactic center source, IRS 21, as large as it appears?" *SPIE*, 4005, 180
54. Max, C. E., Macintosh, B. A., Gibbard, S., Gavel, D. T., Roe, H., de Pater, I., Ghez, A. M., Acton, S., Wizinowich, P. L., Lai, O. 2000 "Neptune and Titan Observed With Keck Telescope Adaptive Optics," *Proc. SPIE*, 4007, 803
55. Ghez, A. M., Morris, M., Becklin, E. E., Kremenek, T., and Tanner, A. 2000, "The Accelerations of Stars Orbiting the Milky Way's Central Black Hole," *Nature*, 407, 349
56. Ghez, A. M., Kremenek, T., Tanner, A., Morris, M., and Becklin, E. E. 2001, "Towards Complete Stellar Orbits Around the Galaxy's Central Black Hole: The First Acceleration Measurements" in *ESO Proceedings of "Black Holes in Binaries and Galactic Nuclei,"* eds L. Kaper, E.P.J. van den Heuvel, and P.A. Woudt, p. 72
56. White, R. J. & Ghez, A. M. 2001, "Young Binary Stars in Taurus-Auriga," in "The Formation of Binary Stars," *Proceedings of IAU Symp. 200*, eds. B. Mathieu and H. Zinnecker, p. 332
57. Ghez, A. M., Morris, M., Becklin, E. E., Kremenek, T., and Tanner, A. 2001, "The Keck Proper Motion Study of the Galaxy's Central Stellar Cluster: From Speckle Imaging and Velocities to Adaptive Optics and Accelerations," in "Dynamics of Star Clusters and the Milky Way" *Astronomical Society of the Pacific Conference Series*, Vol. 228, p. 309, eds. S. Deiters, B. Fuchs, A. Just, R. Spurzem, and R. Wielen (San Francisco: ASP)
58. Ghez, A. M. 2000, "What Can Pre-Main-Sequence Binary Star Populations Tell Us About Formation Mechanism?," in "The Formation of Binary Stars," *Proceedings of IAU Symp. 200*, eds. B. Mathieu and H. Zinnecker, p. 210
59. McCabe, C. and Ghez, A. M. 2000, "A Detailed Study of the GG Tau Circumbinary Disk," in "The Formation of Binary Stars," *Proceedings of IAU Symp. 200*, eds. B. Mathieu and H. Zinnecker, p. 245
60. White, R. J. & Ghez, A. M. 2001, "Young Binary Stars in Taurus-Auriga," *IAU Symposium No. 200*, eds. B. Mathieu and H. Zinnecker, p. 332
61. Prato, L., Ghez, A. M., Pina, R. K., Telesco, C. M., Fisher, R. S., Wizinowich, P., Lai, O., Acton, D. S., and Stomski, P., 2001 "Keck Diffraction-Limited Imaging of the Young Quadruple Star System HD 98800," *ApJ*, 549, 590
62. White, R., and Ghez, A. M., 2001 "Observational Constraints on the Formation and Evolution of Binary Stars," *ApJ*, 556, 265
63. Brugmann, B., Ghez, A. M., Greiner, J. 2001 "Black Holes," *PNAS*, 98, 19, 10525
64. Gibbard, S., Roe, H., de Pater, I., Macintosh B., Gavel, D., Max, C. E., Baines, K. H., Ghez, A. 2003, "High-Resolution Infrared Imaging of Neptune from the Keck Telescope," *Icarus*, 156, 1

65. Patience, J., Ghez, A. M., Reid, I. N., Matthews, K. 2002 “Multiplicity Surveys of  $\alpha$ Per and Praesepe: Studying the Effects and Evolution of Companions,” *AJ*, 123, 1570
66. Duchêne, G., Ghez, A. M., McCabe, C. 2002 “Resolved Near-Infrared Spectroscopy of the Mysterious Pre-Main Sequence Binary System T Tau S,” *ApJ*, 568, 771
67. McCabe, C., Duchêne, & Ghez, A. M. 2002, “NICMOS Images of the GG Tau Circumbinary Disk,” *ApJ*, 575, 974
68. Tanner, A. L., Ghez, A. M., Morris, M., and Becklin, E. E. 2002 “Spatially Resolved Observations of the Galactic Center Source, IRS 21,” *ApJ*, 575, 860
69. Hornstein, S. D., Ghez, A. M., Tanner, A., Morris, M., Becklin, E. E., Wizinowich, P., 2002 “Limits on the Short Term Variability of Sagittarius A\* in the Near Infrared,” *ApJ*, 577L, 9
70. Gezari, S., Ghez, A. M., Becklin, E. E., Larkin, J., McLean, I. S., Morris, M. 2002 “Adaptive Optics Near-Infrared Spectroscopy of the SgrA\* Cluster,” *ApJ*, 576, 790
71. Patience, J., White, R. J., Ghez, A. M., McCabe, C., McLean, I. S., Larkin, J. E., Prato, L., Kim, Sungsoo S., Lloyd, J. P., Liu, M. C., Graham, J. R., McIntosh, B. A., Gavel, D. T., Max, C. E., Bauman, B. J., Olivier, S. S., Wizinowich, P., Acton, D. S. 2002, “Stellar Companions to Stars with Planets,” *ApJ*, 581, 654
72. Max, C. E., Macintosh, B. A., Gibbard, S. G., Gavel, D. T., Roe, H. G., de Pater, I., Ghez, A. M., Acton, S. D., Lai, O., Stomski, P., & Wizinowich, P. L. 2002, “Cloud Structures on Neptune Observed with Keck Telescope Adaptive Optics,” *AJ*, 125, 364
73. Patience, J., Macintosh, B., Shuping, R., & Ghez, A. 2003, “A Keck Adaptive Optics Survey of the Trapezium,” in proceedings of IAU Symp. No. 221 on “Star Formation at High Angular Resolution”, p. 84
74. Duchêne, G., McCabe, C., Ghez, A. M., Ménard, F., Stapelfeldt, K., & Duvert, G. 2003, “Combining Scattering and Thermal Emission to Study the Properties of Dust Grains in Protoplanetary Disks,” in Proceedings of “Astrophysics of Dust,” ed. A. N. Witt
75. McCabe, C., Duchêne, G., Ghez, A. M., Macintosh, B. 2003, “Mid-infrared Scattered Light from Protoplanetary Disks: Evidence for Grain Growth,” in Proceedings of “Astrophysics of Dust,” ed. A. N. Witt
76. Ghez, A. M., Duchêne, G., Matthews, K., Hornstein, S. D., Tanner, A., Larkin, J., Morris, M., Becklin, E. E., Salim, S., Kremenek, T., Thompson, D. J., Soifer, B. T., Neugebauer, G., McLean, I. 2003 “The First Measurement of Spectral Lines in a Short-Period Star Bound to the Galaxy’s Central Black Hole: A Paradox of Youth,” *ApJ*, 586, L127
77. McCabe, C., Duchêne, G., & Ghez, A. M. 2003, “The First Detection of Spatially Resolved Mid-Infrared Scattered Light From a Proto-Planetary Disk,” *ApJ*, 588, L113
78. Duchêne, D., Ghez, A. M., McCabe, C., Weinberger, A. 2003 “No Fossil Disk in the T Tauri Multiple System V773 Tauri,” *ApJ*, 592, 288
79. Hornstein, S. D., Ghez, A. M., Tanner, A., Morris, M., & Becklin, E. E. 2003, “Limits on the Short Term Variability of Sagittarius A\* in the Near Infrared,” *Astron. Nachr.*, Vol. 324, No. S1, Special Supplement “The central 300 parsecs of the Milky Way”, Eds. A. Cotera, H. Falcke, T. R. Geballe, S. Markoff
80. Ghez, A. M., Becklin, E. E., Duchêne, G., Hornstein, S., Morris, M., Salim, S., Tanner, A. 2003 “Full Three Dimensional Orbits For Multiple Stars on Close Approaches to the Central Supermassive Black Hole,” *Astron. Nachr.*, Vol. 324, No. S1, Special Supplement “The central 300 parsecs of the Milky Way”, Eds. A. Cotera, H. Falcke, T. R. Geballe, S. Markoff
81. Tanner, A. M., Ghez, A. M., Morris, M., Becklin, E. E. 2003, “Resolving the Northern Arm Sources at the Galactic Center,” *Astron. Nachr.*, Vol. 324, No. S1, Special Supplement “The

- central 300 parsecs of the Milky Way”, Eds. A. Cotera, H. Falcke, T. R. Geballe, S. Markoff
82. Macintosh, B. A., Gavel, D., Givvard, S. G., Max, C. E., Eckart, M., de Pater, I., Ghez, A. M., Specer, J. 2003, “Speckle Imaging of Volcanic Hotspots on Io with the Keck Telescope,” *Icarus*, 165, 137
  83. Ghez, A. M. 2003 “The Supermassive Black Hole at the Center of the Milky Way,” *Carnegie Observatories Astrophysics Series*, Vol. 1: Co-evolution of Black Holes and Galaxies, ed. L. C. Ho (Cambridge: Cambridge Univ. Press)
  84. Ghez, A. M., Wright, S. A., Matthews, K., Thompson, D., Le Mignant, D., Tanner, A., Hornstein, S. D., Morris, M., Becklin, E. E., Soifer, B. T. 2004, “Variable Infrared Emission from the Supermassive Black Hole at the Center of the Milky Way,” *ApJ*, 601, L159
  85. Duchêne, G., McCabe, C., & Ghez, A. M. 2004, “A Multi-wavelength Scattered Light Analysis of the Dust Grain Population in the GG Tau Circumbinary Ring,” *ApJ*, 606, 969
  86. Gibbard, S. G., Macintosh, B., Gavel, D., Max, C. E., dePater, I., Roe, H. G., Ghez, A. M., Young, E. F., McKay, C. P. 2004, “Speckle Imaging of Titan at 2 microns: Surface Albedo, Haze Optical Depth, and Tropospheric Clouds 1996-1998,” *Icarus*, 169, 429
  87. Ghez, A. M. 2004, “Probing the Galactic Black Hole and its Environment with the Orbits of Stars Experiencing Their Closest Approaches,” in proceedings of 4th Cologne-Bonn-Zermatt-Symposium , “The Dense Interstellar Medium in Galaxies,” Zermatt, Switzerland
  88. Bouy, H., Duchêne, G., Köhler, R., Brandner, W., Bouvier, J., Martin, E. L., Ghez, A., Delfosse, T., Forveille, T., Allard, F., Baraffe, I., Basri, G., Close, L., McCabe, C. E. 2004 “First determination of the dynamical mass of a binary L dwarf,” *A&A*, 423, 341
  89. Patience, J., Macintosh, B., Shuping, R., & Ghez, A. 2005, “A Keck Adaptive Optics Survey of the Trapezium,” *Protostars and Planets V*, p. 8503
  90. Konopacky, Q. M., Ghez, A. M., Altenbach, F., McCabe, C., Duchene, G., White, R. J., & Macintosh, B. A. 2005 “Dynamical Masses of Pre-Main Sequence Visual Binary Stars,” *Protostars and Planets V*, 8541
  91. McCabe, C., Ghez, A. M., Prato, L., & Duchêne, G. 2005 “Investigating Disk Evolution: A High Spatial Resolution Mid-Infrared Survey of T Tauri Stars,” *Protostars and Planets V*, 8549
  92. McCabe, C., Duchene, G., Pinte, C., Menard, F., Stapelfeldt, K. R., & Ghez, A. M. 2005 “Thermal Infrared Adaptive Optics Imaging of Circumstellar Disks: Investigating Grain Growth and Disk Structure,” *Protostars and Planets V*, 8627
  93. Beck, T. L., Schaefer, G. H., Duchene, G., & Ghez, A. M. 2005 “T Tau: An Enigmatic Eponym,” *Protostars and Planets V*, 8643
  94. Ghez, A. M., Salim, S., Hornstein, S. D., Tanner, A., Morris, M., Becklin, E. E., Duchêne, G. 2005, “Stellar Orbits Around the Galactic Center Black Hole,” *ApJ*, 620, 744
  95. Bouy, H., Duchêne, G., Köhler, R., Brandner, W., Bouvier, J., Martín, E., & Ghez, A. 2005 “First determination of the orbit of a binary L-dwarf,” 13th Cambridge Workshop on Cool Stars, Stellar Systems and the Sun, eds. F. Favata et al., 560, 277
  96. Weinberg, N. N., Milosavljevic, M., Ghez, A. M., 2005 “Stellar Dynamics at the Galactic Center with an Extremely Large Telescope,” *ApJ*, 622, 878
  97. Munro, M., Pfahl, E., Baganoff, F. K., Brandt, W. N., Ghez, A., Lu, J., Morris, M. R., 2005, “ An Overabundance of Transient X-Ray Binaries Within 1 pc of the Galactic Center,” *ApJ*, 622, L113
  98. Tanner, A., Ghez, A. M., Morris, M. R., & Christou, J. C. 2005 “Stellar Bowshocks in the Northern Arm of the Galactic Center: More Members and Kinematics of the Massive Star Populations,” *ApJ*, 624, 742

99. Lu, J. R., Ghez, A. M., Hornstein, S. D., Morris, M., & Becklin, E. E. 2005, "IRS 16SW - A New Comoving Group of Young Stars in the Central Parsec of the Milky Way," *ApJLett*, 625 51
100. Blake, C. H. et al. 2005, "An Infrared Flash Contemporaneous with the X-rays of GRB 041219a," *Nature*, 435, 181
101. Duchêne, G., Ghez, A. M., McCabe, C., & Ceccarelli, C. 2005, "The Circumstellar Environment of T Tau S at High Spatial and Spectral Resolution," *ApJ*, 628, 832
102. Weinberg, N. N., Milosavljevic, M., Ghez, A. M., 2004 "Astrometric Monitoring of Stellar Orbits at the Galactic Center with a Next Generation Large Telescope," in "Astrometry in the Age of the Next Generation of Large Telescopes," ASP Conference Series, eds P. K. Seidelmann & A. Monet
103. Munro, M. P., Lu, J. R., Baganoff, F. K., Brandt, W. N., Garmire, G. P., Ghez, A. M., Hornstein, S. D., & Morris, M. R. 2005, "A Remarkable Low-Mass X-Ray Binary within 0.1 Parsec of the Galactic Center," *ApJ*, 633, 228
104. Ghez, A. M., Hornstein, S. D., Lu, J. R., Bouchez, A., Le Mignant, D., van Dam, M. A., Wizinowich, P., Matthews, K., Morris, M., Becklin, E. E., Campbell, R. D., Chin, J. C. Y., Hartman, S. K., Johansson, E. M., Lafon, R. E., Stomski, P. J., & Summers, D. M. 2005, "The First Laser Guide Star Adaptive Optics Observations of the Galactic Center: Sgr A\*'s Infrared Color and the Extended Red Emission in its Vicinity," *ApJ*, 635, 1087
105. McCabe, C., Ghez, A. M., Prato, L., Duchêne, G., Fisher, S., & Telesco, C. 2006, "Investigating Disk Evolution: A High Spatial Resolution Mid-Infrared Survey of T Tauri Stars," *ApJ*, 636, 932
106. Bouy, H. Martín, E. L., Brandner, W., Zapatero-Ostorio, M. R., Béjar, V. J. S., Schirmer, M., Huélamo, N., & Ghez, A. M. 2005, "Multiplicity of very low-mass objects in the Upper Scorpius OB association: a possible wide binary population," *A&A*, 451, 177
107. Tuthill, P., Monnier, J., Tanner, A., Figer, D., Ghez, A., Danchi, W. 2006, "Pinwheels in the Quintuplet Cluster," *Science*, 313, 935
108. Duchêne, G., Beust, H., Adjali, F., Konopacky, Q., & Ghez, A. M. 2006, "Accurate Stellar Masses in the Multiple System T Tau," *A&A*, 457, L9
109. Lu, J. R., Ghez, A. M., Hornstein, S. D., Morris, M., Matthews, K., Thompson, D. J. & Becklin 2006, "Galactic Center Youth: Orbits and Origins of the Young Stars in the Central Parsec," *Journal of Physics Conference Series*, 54, 279
110. Rafelski, M., Ghez, A. M., Hornstein, S. D., Lu, J. R., & Morris, M. 2006, "Photometric Stellar Variability in the Galactic Center," *Journal of Physics Conference Series*, 54, 316
111. Hornstein, S., Matthews, K., Ghez, A. M., Lu, J. R., Morris, M., Becklin, E. E., Baganoff, F. K., & Rafelski, M. 2006, "Infrared/X-ray Intensity Variations & the Color of Sgr A\*," *Journal of Physics Conference Series*, 54, 399
112. Rafelski, M., Ghez, A. M., Hornstein, S. D., Lu, J. R., Morris, M. 2007, "Photometric Stellar Variability in the Galactic Center," *ApJ*, 659, 1241
113. Morris, M. R., Hornstein, S. D., Ghez, A. M., Lu, J. R., Matthews, K., and Baganoff, F. K. 2007, "Short-Term Variability of Sgr A\*," in proceedings of IAU Symposium No. 238 "Black Holes: from Stars to Galaxies - across the Range of Masses", eds. V. Karas & G. Matt, 238, 195
114. Konopacky, Q. M., Ghez, A. M., Duchêne, G., Macintosh, B. A. 2007, "Measuring the Mass of a Pre-Main Sequence Binary Star Through the Orbit of TWA 5A," *AJ*, 133, 208
115. Konopacky, Q. M., Ghez, A. M., Rice, E. L., & Duchêne, G. 2007 "New Very Low Mass Binaries in the Taurus Star-Forming Region," *ApJ*, 663, 394

116. Tanner, A., Beichman, C., Akeson, R., Ghez, A., Grankin, K. N., Herbst, W., Hillenbrand, L., Huerta, M., Konopacky, Q., Metchev, S., Mohanty, S., Prato, L., Simon, M. 2007, "SIM PlanetQuest Key Project Precursor Observations to Detect Gas Giant Planets around Young Stars," *PASP*, 119, 747
117. Hornstein, S., Matthews, K., Ghez, A. M., Lu, J. R., Morris, M., Becklin, E. E., Rafelski, M., Baganoff, F. K., 2007, "A Constant Spectral Index for Sagittarius A\* During Infrared/X-ray Intensity Variations," *ApJ*, 667, 900
118. Duchêne, G., Bontemps, S., Bouvier, J., André, P., Djupvik, A. A., & Ghez, A. M. 2007, "Multiple Protostellar Systems II. A High Resolution Near-Infrared Imaging Survey in Nearby Star-Forming Region," *A&A*, 476, 229
119. Boden, A. F., Torres, G., Sargent, A. I., Akeson, R. L., Carpenter, J. M., Boboltz, D. A., Massi, M., Ghez, A. M., Latham, D. W., Johnston, J. K., Menten, K. M., Ros, E. 2007, "Dynamical Masses for Pre-Main-Sequence Stars: A Preliminary Physical Orbit for V773 Tau A," *ApJ*, 670, 1214
120. Stolte, A., Ghez, A. M., Morris, M., Lu, J. R., Brandner, W., Matthews, K., 2007, "The Proper Motion of the Arches Cluster with Keck Laser-Guide Star Adaptive Optics," *ApJ*, 675, 1278
121. Bouy, H., Martin, E., Brandner, W., Forveille, T., Delfosse, X., Huélamo, N., Basri, G., Girard, J., Zapatero Osorio, M.-R., Stumpf, M., Ghez, A., Valdivielso, L., Marchis, F., Burgasser, A. J., Cruz, K. 2008 "Follow-up Observations of Binary Ultra-Cool Dwarfs," *A&A*, 481, 757
122. Marrone, D. P., Baganoff, F. K., Morris, M., Moran, J. M., Ghez, A. M., Hornstein, S. D., Dowell, C. D., Munoz, D. J., Bautz, M. W., Ricker, G. R., Brandt, W. N., Gamire, J. R., Lu, J. R., Matthews, K., Zhao, J.-H., Rao, R., & Bower, G. C. 2008, "An X-Ray, IR, and Submillimeter Flare of Sagittarius A\*," *ApJ*, 682, 373
123. Ghez, A. M., Salim, S., Weinberg, N., Lu, J., Do, T., Dunn, J. K., Matthews, K., Morris, M., Yelda, S., Becklin, E. E. 2008, "Probing the properties of the Milky Way's central supermassive black hole with stellar orbits," *IAU Symposium*, 248, 52
124. Pott, J.-U., Eckart, A., Glindemann, A., Kraus, S., Schödel, R., Ghez, A.M., Woillez, J., Weigelt, G. 2008, "First VLTI infrared spectro-interferometry on GCIRS 7. Characterizing the prime reference source for Galactic center observations at highest angular resolution," *A&A*, 487, 413
125. Smith, N., Foley, R. J., Bloom, J. S., Li, W., Filippenko, A. V., Gavazzi, R., Ghez, A., Konopacky, Q., Malkan, M. A., Marshall, P. J., Pooley, D., Treu, T., Woo, J.-H. 2008, "Late-Time Observations of SN 2006gy: Still Going Strong," *ApJ*, 686, 485
126. Do, T., Ghez, A. M., Morris, M. R., Yelda, S., Lu, J. R., Hornstein, S. D., Matthews, K. 2008, "Testing for periodicities in near-IR light curves of Sgr A\*," *Journal of Physics Conference Series*, 131, 012003
127. Lu, J. Ghez, A. M., Hornstein, S. D., Morris, M. R., Becklin, E. E., Matthews, K., "Orbits and Origins of the Young Stars in the Central Parsec of the Galaxy," 2008, *Journal of Physics Conference Series*, 131, 012012
128. Pott, J.-U., Eckart, A., Ghez, A., Kraus, S. 2008, "Science with large-aperture infrared interferometry - size does matter or talking about a new tool to study the galactic center," *Journal of Physics Conference Series*, 131, 012014
129. Stolte, A., Ghez, A. M., Morris, M. R., Lu, J. R., Brandner, W., & Matthews, K. 2008, "The orbital motion of the Arches cluster clues on cluster formation near the galactic center," *Journal of Physics Conference Series*, 131, 012015

130. Meyer, L., Do, T., Ghez, A. M., Morris, M. R., Witzel, G., Eckart, A., Bélagner, G., Schödel, R. 2008, "A 600 Minute Near-Infrared Lightcurve of Sagittarius A\*," *ApJLett*, 688, L17
131. Ghez, A. M., Salim, S., Weinberg, N. N., Lu, J. R., Do, T., Dunn, J. K., Matthews, K., Morris, M., Yelda, S., Becklin, E. E., Kremenek, T., Milosavljevic, M., Naiman, J., 2008, "Measuring Distance and Properties of the Milky Way's Central Supermassive Black Hole with Stellar Orbits," *ApJ*, 689, 1044
132. Beichman, C., et al. 2009, "Formation and Evolution of Planetary Systems," *Astro2010: The Astronomy and Astrophysics Decadal Survey*, 2010, 15
133. Ghez, A., et al. 2009, "The Galactic Center: A Laboratory for Fundamental Astrophysics and Galactic Nuclei," *Astro2010: The Astronomy and Astrophysics Decadal Survey*, 2010, 89 (arXiv:0903.0383)
134. Lu, J. R., McCrady, N., Krumholz, M., Ghez, A., Kraus, A., Wright, S., & Goto, M. 2009, "Star Formation's Dependence on Environment," *Astro2010: The Astronomy and Astrophysics Decadal Survey*, 2010, 187
135. Morris, M., et al. 2009, "Explorations of the Massive Molecular Reservoir at The Galactic Center," *Astro2010: The Astronomy and Astrophysics Decadal Survey*, 2010, 213
136. Lu, J. Ghez, A. M., Hornstein, S. D., Morris, M. R., Becklin, E. E., Matthews, K., "A Disk of Young Stars at the Galactic Center as Determined by Individual Stellar Orbits," 2009, *ApJ*, 690, 1463
137. Konopacky, Q. M., Ghez, A. M., Barman, T. S., Rice, E. L., McLean, I. S., & Duchêne, G. 2009, "High Precision Dynamical Masses for Brown Dwarf Binaries," *American Institute of Physics Conference Series*, 1094, 112
138. Do, T., Ghez, A. M., Morris, M. R., Yelda, S., Lu, J. R., Hornstein, S. D., Matthews, K. 2008, "A Near-infrared Variability Study of Our Galaxy's Supermassive Black Hole: A Red Noise Source with No Detected Periodicity," *ApJ*, 691, 1021
139. Meyer, L., Do, T., Ghez, A., Morris, M. R., Yelda, S., Schödel, R., & Eckart, A. 2009, "A Power-Law Break in the Near-Infrared Power Spectrum of the Galactic Center Black Hole," *ApJLett*, 694, L87
140. Baldovin-Saavedra, C., Audard, M., Duchêne, G., Güdel, M., Skinner, S. L., Paerels, F. B. S., Ghez, A., McCabe, C. 2009, "HDE 245059: A Weak-Lined T Tauri Binary Revealed by Chandra and Keck," *ApJ*, 697, 493
141. Do, T., Ghez, A. M., Morris, M. R., Lu, J., Matthews, K., Yelda, S., & Larkin, J. 2009, "High Angular Resolution Integral-field Spectroscopy of the Galaxy's Nuclear Cluster: A Missing Stellar Cusp?," *ApJ*, 703, 1323
142. Pott, J.-U., Woillez, J., Akeson, R., L., Berkey, B., Colavita, M. M., Copper, A., Eisner, J. A., Ghez, A. M., Graham, J. R., Hellenbrand, L., Hrynewych, M., Mediros, D., Millan-Gabet, R., Monnier, J., Morrison, D., Panteleeva, T., Quataert, E., Randolph, B., Smith, B., Summers, K., Tsubota, K., Tyau, C., Weinberg, N., Wetherell, D., Wizinowich, P. L. 2009, "Astrometry with the Keck Interferometer: The ASTRA Project and its Science," *New Astronomy Reviews*, 53, 11
143. Stolte, A., Ghez, A., Morris, M., Lu, J., Brandner, W., Matthews, K. 2009, "The Orbital Motion of the Arches Cluster: Clues on Cluster Formation Near the Galactic Center," *Ap&SS*, 324, 137
144. Pott, J.-U., Perrin, M. D., Furlan, E., Metchev, S., Ghez, A., & Herbst, T. 2010, "Ruling Out Stellar Companions and Resolving the Innermost Regions of Transitional Disks with the Keck Interferometer," *ApJ*, 710, 265

145. Konopacky, Q. M., Ghez, A. M., Barman, T. S., Rice, E. L., Bailey, J. I. III, White, R. J., McLean, I. S., Duchêne, G. 2010, “High Precision Dynamical Masses of Very Low Mass Binaires,” *ApJ*, 711, 1087
146. Duchêne, G., McCabe, C., Pinte, C., Stapelfeldt, K. R., Ménard, F., Duvert, G., Ghez, A. M., Maness, H. L., Bouy, H., Barrado Y Navaschués, D., Morales-Calderoón, M., Wolf, S., Padgett, D. L., Brooke, T. Y., & Noriega-Crespo, A. 2010, “Panchromatic Observations and Modeling of the HV Tau C Edge-on Disk,” *ApJ*, 712, 112
147. Smith, N., Miller, A., Weidong, L., Filippenko, A. V., Silverman, J. M., Howard, A. W., Nugent, P., Marcy, G. W., Bloom, J., Ghez, A. M., Lu, J., Yelda, S., Bernstein, R. A., Colucci, J. E. 2010, “Discovery of Precursor LBV Outbursts in Two Recent Optical Transients: The Fitfully Variable Missing Links UGC 2773-OT and SN 2009ip,” *AJ*, 139, 1451
148. Eisenhardt, P. R. M., Griffith, R. L., Stern, D., Ashby, M. L. N., Brodwin, M., Brown, M. J. I., Dey, A., Ghez, A. M., Glikman, E., Gonzalez, A. H., Kirkpatrick, J. D., Konopacky, Q., Mainzer, A., Vollbach, D., Wright, S. A., Wright, E. L. 2010, “Ultracool Field Brown Dwarf Candidates Selected at 4.5  $\mu\text{m}$ ,” *AJ*, 139, 2455
149. Pott, J.-U., Malkan, M. A., Elitzur, M., Ghez, A. M., Herbst, T. M., Schödel, R., Woillez, J. 2010, “Luminosity-variation Independent Location of the Circum-nuclear, Host Dust in NGC 4151,” *ApJ*, 715, 736
150. Pott, J.-U., Woillez, J., Ragland, S., Wizinowich, P. L., Eisner, J. A., Monnier, J. D., Akeson, R. L., Ghez, A. M., Graham, J. R., Hillenbrand, L. A., Millan-Gabet, R., Appleby, E., Berkey, B., Colavita, M. M., Cooper, A., Felizardo, C., Herstein, J., Hrynevych, M., Medeiros, D., Morrison, D., Panteleeva, T., Smith, B., Summers, K., Tsubota, K., Tyau, C., Wetherell, E. 2010 “First Keck Interferometer Measurements in Self-phase Referencing Mode: Spatially Resolving Circumstellar Line Emission of 48 Lib,” *SPIE Proceedings*, 7734
151. Eisner, J. A., Akeson, R., Colavita, M., Ghez, A., Graham, J., Hillenbrand, L., Millan-Gabet, R., Monnier, J. D., Pott, J.-U., Ragland, S., Wizinowich, P., Woillez, J. 2010 “Science with the Keck Interferometer ASTRA Program,” *SPIE Proceedings*, 7734
152. Woillez, J., Akeson, R., Colavita, M., Eisner, J., Ghez, A., Graham, J., Hillenbrand, L., Millan-Gabet, R., Monnier, J., Pott, J.-U., Ragland, S., Wizinowich, P., Appleby, E., Berkey, B., Cooper, A., Felizardo, C., Herstein, J., Hrynevych, M., Martin, O., Medeiros, D., Morrison, D., Panteleeva, T., Smith, B., Summers, K., Tsubota, K., Tyau, C., Wetherell, E. 2010, “ASTRA: Astronomy and Phase-referencing Astronomy on the Keck Interferometer,” *SPIE Proceedings*, 7734
153. Barton, E. J., Larkin, J. E., Moore, A. M., Wright, S. A., Crampton, D., Simard, L., Macintosh, B., Côte, P., Barth, A., Ghez, A. M., Lu, J., Davidge, T. J., Law, D. R., and the IRIS Science Team, 2010 “The Infrared Imaging Spectrograph (IRIS) for TMT: The Science Case,” *SPIE Proceedings*, 7735
154. Lu, J. R., Ghez, A. M., Yelda, S., Do, T., Clarkson, W., McCrady, N., Morris, M. 2010 “Recent Results and Perspectives for Precision Astronomy and Photometry with Adaptive Optics,” *SPIE Proceedings*, 7736
155. Stolte, A., Morris, M. R., Ghez, A. M., Do, T., Lu, J. R., Ballard, C., Mills, E., Matthews, K. 2009, “Disks in the Arches cluster - survival in a starburst environment,” *ApJ*, 718, 810
156. Pott, J.-U., Ragland, S., Wizinowich, P.L., Eisner, J. A., Monnier, J. D., Akeson, R. L., Ghez, A. M., Graham, J. R., Hillenbrand, L. A., Millan-Gabet, R., Appleby, E., Berkey, B., Colavita, M. M., Cooper, A., Felizardo, C., Herstein, J., Hrynevych, M., Medeiros, D., Morrison, D., Panteleeva, T., Smith, B., Summers, K., Tsubota, K., Tyau, C., Wetherell, E., 2010, “Probing

- Local Density Inhomogeneities in the Circumstellar Disk of a Be Star Using the New Spectroastrometry Mode at the Keck Interferometer,” *ApJ*, 721, 802
157. Yelda, S., Lu, J. R., Ghez, A. M., Clarkson, W., Anderson, J., Do, T., Matthews, K. 2010, “Improving Galactic Center Astrometry by Reducing the Effects of Geometric Distortion,” *ApJ*, 725, 331
  158. McCabe, C., Duchêne, G., Pinte, C., Stapelfeldt, K. R., Ghez, A. M., & Ménard, F. 2010, “Spatially Resolving the HK Tau B Edge-on Disk from 1.2 - 4.7  $\mu\text{m}$ : A Unique Scattered Light Disk,” *ApJ*, 727, 90
  159. Clarkson, W., Lu, J. R., Ghez, A. M., Morris, M. R., McCrady, N., Stolte, A., & Yelda, S. 2011, “A Sharper Look at the Motion of Stars in the Arches with Keck-LGS Adaptive Optics,” *Astronomical Society of the Pacific Conference Series*, 439, 119
  160. McCrady, N., Lu, J., Clarkson, W., Ghez, A., Morris, M. R., Stolte, A., & Yelda, S. 2011, “Using LGS AO to Measure the Arches Mass Function,” *Astronomical Society of the Pacific Conference Series*, 439, 121
  161. Yelda, S., Ghez, A. M., Lu, J. R., Do, T., Clarkson, W., & Matthews, K. 2011, “Increasing the Scientific Return of Stellar Orbits at the Galactic Center,” *Astronomical Society of the Pacific Conference Series*, 439, 167
  162. Do, T., Ghez, A. M., Morris, M. R., Lu, J. R., Matthews, K., Yelda, S., Wright, S., & Larkin, J. 2011, “Testing Stellar Cusp Formation Theories with Observations of the Milky Way Nuclear Star Cluster,” *Astronomical Society of the Pacific Conference Series*, 439, 200
  159. Boden, A. F., Torres, G., Duchêne, G., Konopacky, Q., Ghez, A. M., Torres, R. M., Loinard, L. 2011, “A Surprising Dynamical Mass of V773 Tau B,” *ApJ*, accepted
  160. Konopacky, Q. M., Ghez, A. M., Fabrycky, D. C., Macintosh, B. A., White, R. J., Barman, T. S., Rich, E. L., Hallinan, G., Duchêne, G. 2011 “Rotational Velocities of Individual Components in Very Low Mass Binaries,” *ApJ*, submitted
  161. Clarkson, W. I., Ghez, A. M., Morris, M. R., Lu, J. R., Stolte, A., McCrady, N., Do, T., & Yelda, S. 2011 “Proper Motions of the Arches Cluster with Keck LGS-Adaptive Optics: The First Kinematic Mass Measurement of the Arches,” *ApJ*, submitted