

**BEN R. OPPENHEIMER**  
ASSOCIATE CURATOR AND ASSOCIATE PROFESSOR  
DEPARTMENT OF ASTROPHYSICS  
DIVISION OF PHYSICAL SCIENCES

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**HIGHEST DEGREE EARNED**

Ph.D.

**AREA OF SPECIALIZATION**

Comparative exoplanetary science

**EDUCATIONAL EXPERIENCE**

Ph.D. in Astronomy, California Institute of Technology, 1999

B.A. in Physics, Columbia College, Columbia University, 1994

**PREVIOUS EXPERIENCE IN DOCTORAL EDUCATION**

FACULTY APPOINTMENTS

Adjunct Associate Professor, Columbia University, 2004-present

Adjunct Lecturer and Visiting Scientist, Cambridge University, 2004

COURSES TAUGHT

Exoplanetary Science, Kobe University International Summer School, July 2006.

GRADUATE ADVISEES

Neil Zimmerman, Ph.D., Columbia University, 2006-present

Sarah Tuttle, Ph.D., Columbia University, February 2007-present

Emily Rauscher, Ph.D., Columbia University, November 2007-present

Sasha Hinkley, Columbia University, 2005-present

GRADUATE COMMITTEES

Gail Schaeffer, State University of New York at Stony Brook, 2004

**RESEARCH GRANT SUPPORT**

FEDERAL SOURCES

National Science Foundation, Development of Integral Field Spectroscopy for Exoplanetary Science, August 1, 2005-July 31, 2008.

National Aeronautics and Space Administration, The Lyot Project: Surveying TPF Target Stars and Pioneering TPF Techniques, June 1, 2005-May 31, 2008.

National Science Foundation, NSF/AFOSR Astronomy: The Lyot Project: Optimized, Diffraction-Limited Coronagraphy, September 15, 2003-August 31, 2006.

National Science Foundation, Development of a Precision Stellar Coronagraph for Imaging Exoplanets, Brown Dwarfs and Disks, September 1, 2002-August 31, 2006.

### RECENT ARTICLES IN REFEREED JOURNALS (2003-2008)

- Oppenheimer, B. R., Brenner, D., Hinkley, S., Zimmerman, N., Sivaramakrishnan, A., Soummer, R., Kuhn, J., Graham, J. R., Perrin, M.; Lloyd, J. P., Roberts, L. C. Jr., Harrington, D. M.. In press (accepted January 15, 2008). The Solar-System-Scale Disk around AB Aurigae. *The Astrophysical Journal*.
- Lafrenière, D., Doyon, R. , Marois, C. , Nadeau, D. , Oppenheimer, B. R. , Roche, P. F. , Rigaut, F.; Graham, J. R.; Jayawardhana, R.; Johnstone, D.; Kalas, P. G.; Macintosh, B. , Racine, R. 2007. The Gemini Deep Planet Survey. *The Astrophysical Journal*, Vol. 670, pp. 1367-1390
- Ducourant, C. , Teixeira, R. ,Hambly, N. C. ,Oppenheimer, B. R. ,Hawkins, M. R. S. , Rapaport, M. , Modolo, J. , Lecampion, J. F. 2007. Trigonometric parallaxes of high velocity halo white dwarf candidates. *Astronomy and Astrophysics*, Vol. 470, pp. 387-394
- Sivaramakrishnan, A., Oppenheimer, B.R., Hinkley, S., Brenner, D., Soummer, R., Mey, J.L., Lloyd, James P., Perrin, M.D., Graham, J.R., Makidon, R. B., Roberts, L.C., Jr., Kuhn, J.R. 2007. The Lyot Project: status and results. *Comptes Rendus Physique*, Vol. 8, pp. 355-364
- Macintosh, B., Graham, J., Palmer, D., Doyon, R., Gavel, D., Larkin, J., Oppenheimer, B.R., Saddlemyer, L., Wallace, J. K. Bauman, B., Erikson, D., Poyneer, L., Sivaramakrishnan, A., Soummer, R., Veran, JP., 2007. Adaptive optics for direct detection of extrasolar planets: the Gemini Planet Imager. *Comptes Rendus Physique*, Vol. 8, pp. 365-373
- Beuzit, J.-L., D. Mouillet, B. R. Oppenheimer, and J. D. Monnier. 2007. Direct detection of exoplanets. *In* B. Reipurth, D. Jewitt, and K. Keil (editors), *Protostars and Planets V: 717-732*. Tucson: University of Arizona Press.
- Hinkley\*, S., 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. 2007. Temporal evolution of coronagraphic dynamic range and constraints on companions to Vega. *Astrophysical Journal* 654: 633-640. (Sponsor: B. R. Oppenheimer)
- Digby, A., S. Hinkley, B. Oppenheimer, A. Sivaramakrishnan, J. Lloyd, M. Perrin, L. Roberts, R. Soummer, D. Brenner, R. Makidon, M. Shara, J. Graham, P. Kalas, J. Kuhn, and L. Newburgh. 2006. The challenges of coronagraphic astrometry. *Astrophysical Journal* 650: 484-496.
- Macintosh, B., J. Graham, D. Palmer, R. Doyon, D. Gavel, J. Larkin, B. Oppenheimer, L. Saddlemyer, J. K. Wallace, B. Bauman, J. Evans, D. Erikson, K. Morzinski, D. Phillion, L. Poyneer, A. Sivaramakrishnan, R. Soummer, S. Thibault, and J.-P. Veran. 2006. The Gemini planet imager. *In* B.L. Ellerbroek and D. Bonaccini Calia (editors), *Advances in Adaptive Optics II 6272: 62720L*. Bellingham, WA: SPIE.
- Macintosh, B. A., J. R. Graham, B. R. Oppenheimer, L. M. Poyneer\*, A. Sivaramakrishnan, and J.-P. Veran. 2006. MEMS-based extreme adaptive optics for planet detection. *In* S.S. Olivier, S.A. Tadigadapa, and A. K. Henning

- (editors), MEMS/MOEMS components and their applications: 48-57. Bellingham, WA: SPIE.
- Makidon, R. B., A. Sivaramakrishnan, R. Soummer, B. R. Oppenheimer, L. C. Roberts, J. R. Graham, and M. D. Perrin. 2006. The Lyot project: Understanding the AEOS adaptive optics PSF. *In* C. Aime and F. Vakili (editors), Direct imaging of exoplanets: Science and techniques: 603-606. Cambridge: Cambridge University Press.
- Sivaramakrishnan, A., and B. R. Oppenheimer. 2006. Astrometry and photometry with coronagraphs. *Astrophysical Journal* 647: 620-629.
- Sivaramakrishnan, A., 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, and T. A. Ten Brummelaar. 2006. Scintillation and pupil illumination in adaptive optics coronagraphy. *In* C. Aime and F. Vakili (editors), Direct imaging of exoplanets: Science and techniques: 613-616. Cambridge: Cambridge University Press.
- Soummer, R., C. Aime, A. Ferrari, A. Sivaramakrishnan, L. Jolissaint, J. P. Lloyd, B. R. Oppenheimer, R. B. Makidon, and M. Carillet. 2006. Speckle statistics in direct and coronagraphic imaging. *In* C. Aime and F. Vakili (editors), Direct imaging of exoplanets: Science and techniques: 581-586. Cambridge: Cambridge University Press.
- Soummer, R., C. Aime, A. Ferrari, A. Sivaramakrishnan, L. Jolissaint, J. P. Lloyd, B. R. Oppenheimer, R. B. Makidon, and M. Carillet. 2006. Speckle statistics in direct and coronagraphic imaging. *In* C. Aime and F. Vakili (editors), Direct imaging of exoplanets: Science and techniques: 581-586. Cambridge: Cambridge University Press.
- Traub, W. A., M. Levine, S. Shaklan, J. Kasting, J. R. Angel, M. E. Brown, R. A. Brown, C. Burrows, M. Clampin, A. Dressler, H. C. Ferguson, H. B. Hammel, S. R. Heap, S. D. Horner, G. D. Illingworth, N. J. Kasdin, M. J. Kuchner, D. Lin, M. S. Marley, V. Meadows, C. Noecker, B. R. Oppenheimer, S. Seager, M. Shao, K. R. Stapelfeldt, and J. T. Trauger. 2006. TPF-C: status and recent progress. *In* J. D. Monnier, M. Scholler, and W. C. Danchi (editors), Advances in Stellar Interferometry 6268: 62680T. Bellingham, WA: SPIE.
- Makidon, R. B., A. Sivaramakrishnan, M. D. Perrin, L. C. Roberts Jr., B. R. Oppenheimer, R. Soummer, and J. R. Graham. 2005. An Analysis of fundamental waffle mode in early AEOS adaptive optics images. *Publications of Astronomical Society of the Pacific* 117: 831-846.
- Nakajima, T., J.-I. Morino, T. Tsuji, H. Suto, M. Ishii, M. Tamura, M. Fukagawa, K. Murakawa, S. Miyama, H. Takami, N. Takato, S. Oya, S. Hayashi, T. Kudo, Y. Itoh, Y. Oasa, and B. R. Oppenheimer. 2005. A coronagraphic search for brown dwarfs and planets around nearby stars. *Astronomische Nachrichten* 326: 952-957.
- Roberts, L. C., Jr., N. H. Turner, L. W. Bradford, T. . ten Brummelaar, B. R. Oppenheimer, J. R. Kuhn, K. Whitman, M. D. Perrin, and J. R. Graham. 2005.

Adaptive optics photometry and astrometry of binary stars. *Astronomical Journal* 130: 2262-2271.

- Sivaramakrishnan, A., R. Soummer, A. V. Sivaramakrishnan, J. P. Lloyd, B. R. Oppenheimer, and R. B. Makidon. 2005. Low-order aberrations in band-limited Lyot Coronagraphs. *Astrophysical Journal* 634: 1416-1422.
- Breckinridge, J.B. and B. R. Oppenheimer. 2004. Polarization Effects in Reflecting Coronagraphs for White Light Applications in Astronomy. *The Astrophysical Journal*, Vol. 600, p. 1091-1098.
- Salim, S., R. M. Rich, B. M. Hansen, L. V. E. Koopmans, B. R. Oppenheimer, and R. D. Blandford. 2004. Cool White Dwarfs Revisited: New Spectroscopy and Photometry. *The Astrophysical Journal*, Vol. 601, p. 1075-1087.
- Perrin, M.D., A. Sivaramakrishnan, R. B. Makidon, B. R. Oppenheimer, and J. R. Graham. 2003. The Structure of High Strehl-Ratio Point Spread Functions. *The Astrophysical Journal*, Vol. 596, p. 702.

#### **SPECIAL RECOGNITION/AWARDS**

*Annual Review of Astronomy and Astrophysics*, Invited Author, Vol. 49, 2007  
Institute of Astronomy, Cambridge University, Visiting Scientist, 2006, 2004  
Carter Memorial Lecturer, Carter Observatory, Wellington, New Zealand, 2003  
Kalbfleisch Research Fellow, American Museum of Natural History, 2002-2004  
Beckman Frontiers of Science Participant, National Academy of Sciences, 2002  
Hubble Postdoctoral Research Fellow, AMNH/UC Berkeley, 1999-2002  
Douglass Scholar, Steward Observatory, University of Arizona, Tucson, 2000  
National Science Foundation Graduate Research Fellow, 1994-1997