

Christopher J. Crockett

CONTACT INFORMATION

Lowell Observatory
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RESEARCH INTERESTS

Extrasolar planets, astrobiology, optical and infrared instrumentation

EDUCATION

University of California, Los Angeles, CA

Ph.D., Astrophysics, *in progress*

- Thesis Topic: Brown Dwarf and Giant Planet Companions to Young Stars
- Advisor: Dr. Lisa Prato

M.S., Astrophysics, June 2008

- Thesis Topic: Morphological Evolution of Distant Galaxies
- Advisor: Dr. James Larkin

University of Maryland, College Park, MD

Non-degree graduate student, September 2004 - June 2005

Johns Hopkins University, Gaithersburg, MD

M.Ed. student, September 2003 - June 2004

Cornell University, Ithaca, NY

M.Eng., Electrical Engineering, May 2000

- Design Project: Electrical Systems for RoboCup 2000
- Advisor: Dr. Raffaello D'Andrea
- Specialization in Systems Engineering

B.S., Electrical Engineering, May 1999

- Internship with SALIX Technologies, Rockville, MD
- Specialization in Telecommunications and Data Networks

RESEARCH APPOINTMENTS

Graduate Student Researcher

University of California, Los Angeles, CA

June 2007 - June 2008

- Developed fully-automated galaxy surface brightness fitting algorithm for bulge-disk decomposition study.
- Investigated the K-band morphological evolution of disk galaxies out to $z \sim 1$ with Keck NGS AO.
- Assisted in the testing of the HAWAII-2RG infrared array detector for both MOS-FIRE and GPI instruments.

Research Assistant

University of Maryland, College Park, MD

Jan 2005 - Aug 2006

- Member of the science team for NASA's Deep Impact mission to explore comet 9P/Tempel 1.
- Assisted in spacecraft instrument calibration including wavelength resolution, instrument pointing drift, and photometric calibration.

- Tracked comet photometry throughout mission; data used to generate light curves, determine nucleus rotation state, and characterize outbursts.
- Extensive analysis of pre- and post-impact inner coma morphology and visible spectrum of nucleus and coma.
- Developed education and public outreach products including teacher materials, public release photos and movies of impact event.

TEACHING
EXPERIENCE

Lab Design/Instructor

Center for Adaptive Optics Professional Development Program **2007 - present**
Part of a team developing lab activities for an instrumentation course at Maui Community College. The lessons will use inquiry teaching methods to expose native Hawaiian students to digital image storage, transmission, and processing. The activity, still in development, will be taught this fall.

Workshop Participant

NASA Center for Astronomy Education Workshop, Austin, TX **Jan 2007**
Participated in a two-day workshop for grad students, postdocs, and faculty instructors of introductory astronomy courses. The workshop focuses on current research in astronomy education and how to incorporate research-based methods of instruction into the classroom.

Teaching Assistant

University of California, Los Angeles, CA **Aug 2006 - June 2007**
Instructor for weekly lab session for Astro 3, an introductory astronomy course for non-science majors. Lead TA for Winter and Spring Quarters.

Private Tutor

Strathmore Tutoring, Rockville, MD **Sept 2004 - June 2006**
Worked one-on-one with high school students seeking help in algebra, calculus, and physics.

High School Teacher

Montgomery County Public Schools, Rockville, MD **Jan 2003 - June 2004**
Developed and taught daily lessons for high school general science and physics courses for a socio-economically diverse student body. Participated in extensive professional development through the Johns Hopkins Master of Arts in Teaching (MAT) program.

Teaching Assistant

Cornell University, Ithaca, NY **Sept 1999 - May 2000**
Instructor for weekly sophomore and junior level electrical design labs for engineering majors.

SERVICE AND
OTHER
EXPERIENCES

Professional Memberships

- American Astronomical Society
- Center for Adaptive Optics
- NASA Center for Astronomy Education

Planetarium Coordinator

Aug 2007 - June 2008, *University of California*, Los Angeles, CA

Museum Guide

July 2007 - June 2008, *Griffith Observatory*, Los Angeles, CA

Board of Directors, Business Manager

June 2002 - May 2004, *Montgomery Playhouse*, Gaithersburg, MD

Hardware Engineer

April 2001 - Jan 2003, *Megisto Systems, Inc.*, Germantown, MD

Hardware Engineer

July 2000 - April 2001, *Tellabs*, Germantown, MD

Engineering Intern

Jan 1998 - Aug 1998, *SALIX Technologies, Inc.*, Gaithersburg, MD

REFEREED PUBLICATIONS

Li, J-Y, A'Hearn, M.F., Belton, M. J. S., **Crockett, C. J.**, Farnham, T. L., Lisse, C. M., McFadden, L. A., Meech, K. J., Sunshine, J. M., Thomas, P. C., Veverka, J. "*Deep Impact photometry of Comet 9P/Tempel 1*", 2007, *Icarus*, 191, 161

Farnham, T. L., Wellnitz, D. D., Hampton, D. L., Li, J.-Y., Sunshine, J. M., Groussin, O., McFadden, L. A., **Crockett, C. J.**, A'Hearn, M. F., Belton, M. J. S., Schultz, P., Lisse, C. M. "*Dust coma morphology in the Deep Impact images of Comet 9P/Tempel 1*", 2007, *Icarus*, 191, 146

Li, J-Y, A'Hearn, M.F., Belton, M. J. S., **Crockett, C. J.**, Farnham, T. L., Lisse, C. M., McFadden, L. A., Meech, K. J., Sunshine, J. M., Thomas, P. C., Veverka, J. "*Deep Impact photometry of Comet 9P/Tempel 1*", 2006, *Icarus*, 187, 41

Farnham, T. L., Wellnitz, D. D., Hampton, D. L., Li, J.-Y., Sunshine, J. M., Groussin, O., McFadden, L. A., **Crockett, C. J.**, A'Hearn, M. F., Belton, M. J. S., Schultz, P., Lisse, C. M. "*Dust coma morphology in the Deep Impact images of Comet 9P/Tempel 1*", 2006, *Icarus*, 187, 26

A'Hearn, M. F., Belton, M. J. S., Delamere, W.A., Kissel, J., Klaasen, K. P., McFadden, L. A., Meech, K. J., Melosh, H. J., Schultz, P. H., Sunshine, J. M., Thomas, P. C., Veverka, J., Yeomans, D. K., Baca, M. W., Busko, I., **Crockett, C. J.**, Collins, S. M., Desnoyer, M., Eberhardy, C. A., Ernst, C. M., Farnham, T. L., Feaga, L., Groussin, O., Hampton, D., Ipatov, S. I., Li, J.-Y., Lindler, D., Lisse, C. M., Mastrodemos, N., Owen, W. M., Richardson, J. E., Wellnitz, D. D., White, R. L. "*Deep Impact: Excavating Comet Tempel 1*", 2005, *Science*, 310, 258

CONFERENCE ABSTRACTS

Crockett, C. J., Larkin, J. "*Morphological Evolution of Distant Galaxies from CATS*", 2007, AAS Meeting 211, 52.06

McFadden, L. A., **Crockett, C. J.**, Wellnitz, D. D., Feaga, L. M., A'Hearn, M. F., Farnham, T. L., Groussin, O., Li, J. Y., Sunshine, J. M., Delamere, A., Klaasen, K. P., Lisse, C. M., Belton, M. J. "*Gas and Dust Imaging of the Inner Coma of 9P/Tempel 1 Before and After Impact*", 2006, American Astronomical Society, DPS meeting 38, 17.04

Li, J. -Y. A'Hearn, M. F., Belton, M. J., **Crockett, C. J.**, Farnham, T. L., Lisse, C. M., McFadden, L. A., Meech, K. J., Sunshine, J. M., Thomas, P. C. "*Comparison of the Photometric Properties of Comet 9P/Tempel 1 with Other Asteroids and Comets*", 2006, American Astronomical Society, DPS meeting 38, 17.02

Li, J. -Y., A'Hearn, M. F., McFadden, L. A., Sunshine, J. M., **Crockett, C. J.**, Farnham, T. L., Lisse, C. M., Thomas, P. C., Deep Impact Science Team. "*Deep Impact Photometry of the Nucleus of Comet 9P/Tempel 1*", 2006, 37th Annual Lunar and Planetary Science Conference, March 13-17, 2006, League City, Texas, Abstract no.1839

Belton, M. J. S., Thomas, P. C., Carcich, B., **Crockett, C. J.**, Deep Impact Science Team. "*The Spin State of 9P/Tempel 1*", 2006, 37th Annual Lunar and Planetary Science Conference, March 13-17, 2006, League City, Texas, Abstract no.1487

McFadden, L.A., **Crockett, C.**, A'Hearn, M., Farnham, T.L., Li, J.Y. "*The Pre-Impact Coma of Comet Tempel 1: Deep Impact Imaging Results*", 2006, AOGS Conference, Singapore

McFadden, L.A., **Crockett, C.**, A'Hearn, M., Farnham, T.L., Lisse, C.M., Li, J.Y., and the Deep Impact Team. "*The Pre-Impact Coma of Comet Tempel 1: Deep Impact Imaging Results*", 2006, 36th COSPAR Scientific Assembly, Beijing, China

Li, J.-Y., A'Hearn, M. F., Belton, M. J. S., **Crockett, C. J.**, Farnham, T. L., Lisse, C. M., McFadden, L. A., Meech, K. J., Sunshine, J. M., Thomas, P. C. "*The comparison of the photometric properties of comet 9P/Tempel 1 with other comets and asteroids*", 2006, 36th COSPAR Scientific Assembly, Beijing, China

McFadden, L. A., **Crockett, C. J.**, A'Hearn, M. F., Belton, M. J. S., Farnham, T. L., Klaasen, K. P., Li, J. Y., Lisse, C. M., Sunshine, J. M., Wellnitz, D. D. "*Deep Impact's Medium Resolution Imaging of the Coma and Nucleus of Comet Tempel 1: Before, During and After Impact*", 2005, AAS Meeting 207, 189.06, Bulletin of the American Astronomical Society, Vol. 37, p.1484

Farnham, T. L., A'Hearn, M. F., Belton, M. J. S., **Crockett, C. J.**, Delamere, A., Groussin, O., Li, J.-Y., Lisse, C. M., McFadden, L. A., Meech, K. J., Wellnitz, D. D., Deep Impact Team. "*Jets in Comet Tempel 1: A Link Between the Coma and the Nucleus*", 2005, AAS Meeting 207, 189.03, Bulletin of the American Astronomical Society, Vol. 37, p.1483

A'Hearn, M. F., Belton, M. J. S., **Crockett, C. J.**, Farnham, T. L., Feaga, L., Groussin, O., Mastrodemos, N., Owen, W. M., Sunshine, J. M., Deep Impact Team. "*Natural Outbursts by Comet Tempel 1*", 2005, AAS Meeting 207, 189.01, Bulletin of the American Astronomical Society, Vol. 37, p.1483