

DAVID CHARBONNEAU

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CURRENT POSITION Thomas D. Cabot Associate Professor of Astronomy, Harvard University

RESEARCH INTERESTS Detection and characterization of planets orbiting nearby, Sun-like stars
Design and implementation of automated telescopes for photometric monitoring
Dynamics and chemistry of planetary atmospheres under strong irradiation
Formation and structure of brown dwarfs, and searches for their low-mass companions

EDUCATION Ph. D. (Astronomy), Harvard University, 2001
A. M. (Astronomy), Harvard University, 1999
Honors B. Sc. with high distinction (Math, Physics, & Astronomy), U. of Toronto, 1996

PREVIOUS POSITIONS Assistant Professor of Astronomy, 2004-2007
Harvard University

Robert A. Millikan Postdoctoral Scholar in Astronomy, 2001-2004
California Institute of Technology

Postdoctoral Fellow, 2001
Harvard College Observatory, Harvard-Smithsonian Center for Astrophysics

Newkirk Research Fellow, 1999-2001
High Altitude Observatory, Ntl Ctr for Atmospheric Research (Advisor: Dr. T. M. Brown)

Research Fellow, 1997-2001
Department of Astronomy, Harvard University (Advisor: Prof. R. W. Noyes)

Summer Research Fellowships:

- Canadian Institute for Theoretical Astrophysics, 1996 (Advisor: Prof. J. R. Bond)
- TRIUMF Cyclotron Facility, U. of British Columbia, 1995 (Advisor: Prof. J. D. King)
- Department of Chemistry, U. of Toronto, 1993 (Advisor: Prof. R. H. Morris)

SELECTED AWARDS Alan T. Waterman Award, National Science Foundation, 2009
Scientist of the Year, Discover Magazine, 2007
David and Lucile Packard Fellowship for Science and Engineering, 2006-2011
NASA Exceptional Scientific Achievement Medal, June 2006
Alfred P. Sloan Research Fellow, 2006-2008
Robert J. Trumpler Award, Astronomical Society of the Pacific, July 2004
awarded to a recent PhD whose research is considered unusually important to astronomy
Bart J. Bok Prize in Astronomy, Harvard University, March 2004
for outstanding research by a recent graduate of the Harvard Department of Astronomy
Spitzer Fellowship, Spitzer Science Center, 2004-2007, declined
Clay Fellowship, Harvard-Smithsonian Center for Astrophysics, 2004-2008, declined
Hubble Fellowship, Space Telescope Science Institute, 2001-2004, 2004-2007, declined
Junior Fellowship, Society of Fellows, Harvard University, 2001-2004, declined
Miller Fellowship, UC Berkeley, 2001-2004, declined
Special Recognition Award, Harvard-Smithsonian Center for Astrophysics, 2001

Fireman Award, Harvard University, 2000

awarded annually to one student in the Dept. of Astronomy by a vote of the faculty

Merit Fellowship, Harvard University, 1999-2000

for outstanding performance during the first three years of graduate study

Newkirk Fellowship, High Altitude Observatory, 1999-2001

1930 Math & Physics Award, University of Toronto, 1995

CURRENT ACTIVITIES

Principal Investigator, MEarth Project to Detect Habitable SuperEarth Exoplanets

Dep. Principal Investigator, EPOCH Investigation, NASA EPOXI Mission of Opportunity

Participating Scientist, NASA Kepler Mission

Principal Investigator, Hubble Space Telescope studies of exoplanets

Principal Investigator, Spitzer Space Telescope studies of exoplanets

co-Principal Investigator, Trans-atlantic Exoplanet Survey (TrES) for Jovian Exoplanets

Team Member, Harvard University Origins of Life Initiative

co-Investigator, Transiting Exoplanet Survey Satellite (TESS) NASA SMEX Proposal

TEACHING & ADVISING

Director of Undergraduate Studies, Astronomy & Astrophysics, Harvard University (2008-)

Advisor, current Harvard PhD students:

- Sarah A. Ballard, "Ultra-precise Photometry from the EPOXI Mission"
- Cullen H. Blake, "Companions of Low-mass Stars and Brown Dwarfs "
- Philip Nutzman, "Ground-Based Searches for Habitable Planets"
- Zachory Berta, "The MEarth Survey for SuperEarths Orbiting Low-mass Stars"

Advisor, previous PhD students:

- Heather A. Knutson (Harvard PhD 2009)
"Portraits of Distant Worlds: Characterizing the Atmospheres of Extrasolar Planets"
- Jonathan S. Devor (Harvard PhD 2008)
"On the Development and Application of Automated Searches for Eclipsing Binaries"
- Francis T. O'Donovan (Caltech PhD 2007)
"The Detection and Exploration of Planets from the Trans-Atlantic Exoplanet Survey"

Advisor, current and previous undergraduate students

- Daniel Handlin (Harvard 2008), "The MEarth Survey for Transiting SuperEarths"
- Sarah Satinover (Harvard 2006), "Radial Velocities from Gemini PHOENIX"
- David Baron (Harvard 2005), "Photometric Monitoring of Nearby M-dwarfs"
- Peter Williams (Harvard 2005), "Secondary Eclipses of Transiting Planets"
- Dagny L. Looper (Caltech 2002), "A Search for Transits of Known Exoplanets"

Advisor, currently 6 postdoctoral scholars:

Christopher J. Burke, Jessie L. Christiansen, Francois Fressin,
Jonathan Irwin, Heather A. Knutson, and David T. F. Weldrake

Lecturer, Harvard University

- Astronomy 16, "Introduction to Stellar and Planetary Astronomy" (2009)
- Astronomy 98, "Junior Tutorial in Astrophysics" (2009)
- Science A-47 "Cosmic Connections" (2005, 2006, 2007)
- Guest lecturer and advisor, Astronomy 98 "Junior Tutorial" (2004, 2005, 2006, 2007)
and Astronomy 97 "Introductory Tutorial in Astrophysics" (2004)

Resident Tutor for Dudley House, Harvard University, 1997-1999

House Master's Award for Service