

# Nicolas B. Cowan

## Contact

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## Biographical

Born in Córdoba, Argentina  
Canadian Citizen  
Married to Daryl Haggard  
Father of Henri Porter Cowan  
Fluent in English and French

## Education

PhD Astronomy, University of Washington, 2009: “Exo-Cartography”

MSc Astronomy, University of Washington, 2006

BSc Physics w/First Class Honours, McGill University, 2004

## Major Awards

Postgraduate Scholarship from the National Sciences and Engineering Research Council of Canada (2006–2009)

Master’s Scholarship from the Fonds de recherche sur la nature et les technologies du Québec (2004–2006)

## Employment

Postdoctoral Researcher, Astronomy Department, University of Washington (2009–2010)

Research Assistant, Astronomy Department, University of Washington (2005–2009)

Teaching Assistant, Astronomy Department, University of Washington (2004–2005)

Researcher, TRIUMF, Vancouver, BC (2004)

Summer Research Intern, TRIUMF (2003)

NSERC Summer Researcher, Simon Fraser University, Vancouver, BC (2002)

## Mentoring, Teaching & Service

**Research Mentoring:** James Bushong (Summer 2007–Winter 2009); Virginia Klemm (Winter–Spring 2006)

**Teaching:** Guest Lectures for ASTR 102, ASTR 497 (Autumn 2008); Guest Lecture at the Art Institute of Seattle (2008); Instructor for ASTR 192: Pre-Major in Astronomy Program (Autumn 2007); Teaching Assistant for ASTR 101 and ASTR 150 courses (Autumn 2004 – Spring 2005)

**Service:** Session Moderator, 2009 UW Undergraduate Research Symposium; Organizing Committee for Astrobiology Graduate Student Conference 2009

**Public Lectures:** Tacoma Astronomical Society (2007); Boeing Employees’ Astronomical Society (2007)

## Research Talks

*Alien Maps of an Ocean-Bearing World*, Towards Other Earths, Oct 22 2009 (Porto, PT)

*Exo-Cartography*, Exoplanet Seminar at NASA GSFC, Sept 24 2009 (Greenbelt, MD)

*Exo-Cartography*, Star & Planet Formation Seminar at STScI, Sept 23 2009 (Baltimore, MD)

*Mapping Exoplanets*, Special Astrophysics Seminar at McGill University, Oct 29, 2008 (Montréal, QC)

*Thermal Maps of Exoplanets*, Astrobiology Science Conference 2008 (Santa Clara, CA)

*Pulse Shape Simulations for the TIGRESS Gamma-ray Detector*, Western Regional Nuclear and Particle Physics Conference, 2005 (Banff, AB)

*Position-Sensitivity in the TIGRESS Gamma-ray Detector*, Canadian Undergraduate Physics Conference, 2003 (Montréal, QC)

## Selected Press

*5 Questions*, Discover Magazine (October 2009)

*UW-led team's work means we may be able to find oceans on other planets*, Seattle PI (June 9, 2009)

*The New Exoplanetology: "I Learned by Watching You, Earth"*, Wired (May 29, 2009)

*Exoplanet Mapping Tested on Earth*, Sky & Telescope (May 28, 2009)

*How to spot oceans on alien worlds*, Scientific American (May 28, 2009)

*Boffins develop interstellar alien ocean-spotting tool*, The Register (May 27, 2009)

*How to Map an Exoplanet's Oceans*, New Scientist (May 16, 2009)

*Mapping Uncharted Territories*, SEED magazine (December 2008)

Interview on *Quirks & Quarks*, CBC Radio (Jan 13, 2007)

## Refereed Publications

H.A. Knutson, D. Charbonneau, **N.B. Cowan**, J.J. Fortney, A.P. Showman, E. Agol & G.W. Henry, *The 8 micron Phase Variation of the Hot Saturn HD 149026b*, ApJ-accepted, 2009.

**N.B. Cowan**, E. Agol, V.S. Meadows, T. Robinson, T.A. Livengood, D. Deming, C.M. Lisse, M.F. A'Hearn, D.D. Wellnitz, S. Seager & D. Charbonneau, *Alien Maps of an Ocean-Bearing World*, ApJ, 700, 915, 2009.

S.L. Ellison, L. Simard, **N.B. Cowan**, I.K. Baldry, D.R. Patton & A.W. McConnachie, *The Mass-Metallicity Relation in Galaxy Clusters: the Relative Importance of Cluster Membership Versus Local Environment*, MNRAS, 396, 1257, 2009.

H.A. Knutson, D. Charbonneau, **N.B. Cowan**, E. Agol, A.P. Showman, J.J. Fortney, G.W. Henry, M.E.

Everett & L.E. Allen, *Multi-Wavelength Constraints on the Day-Night Circulation Patterns of HD 189733b*, ApJ, 690, 822, 2009.

**N.B. Cowan** & E. Agol, *Inverting Phase Functions to Map Exoplanets*, ApJ, 678, L129, 2008.

**N.B. Cowan** & Ž. Ivezić, *The Environment of Galaxies at Low Redshift*, ApJ, 674, L13, 2008.

**N.B. Cowan**, E. Agol & D. Charbonneau, *Hot Nights on Extrasolar Planets: Mid-IR Phase Functions of Hot Jupiters*, MNRAS, 379, 641, 2007.

H.A. Knutson, D. Charbonneau, L.E. Allen, J.J. Fortney, E. Agol, **N.B. Cowan**, A.P. Showman, C.S. Cooper & S.T. Megeath, *A Map of the Day-Night Contrast of the Extrasolar Planet HD 189733b*, Nature, 447, 7141, 2007.

H.C. Scraggs, C.J. Pearson, G. Hackman, M.B. Smith, R.A.E. Austin, G.C. Ball, A.J. Boston, P. Bricault, R.S. Chakravarthy, R. Churchman, **N.B. Cowan**, G. Cronkhite, E.S. Cunningham, T.E. Drake, P. Finlay, P.E. Garrett, G.F. Grinyer, B. Hyland, B. Jones, J.R. Leslie, J.-P. Martin, D. Morris, A.C. Morton, A.A. Phillips, F. Sarazin, M.A. Schumaker, C.E. Svensson, J.J. Valiente-Dobón, J.C. Waddington, L.M. Watters & L. Zimmerman, *TIGRESS Highly-Segmented High-Purity Germanium Clover Detector*, Nuclear Instr. and Methods A543, 431-440, 2005.

C.E. Svensson, G. Hackman, C.J. Pearson, M.A. Schumaker, H.C. Scraggs, M.B. Smith, C. Andreoiu, A. Andreyev, R.A.E. Austin, G.C. Ball, A.J. Boston, R.S. Chakravarthy, R. Churchman, **N.B. Cowan**, T.E. Drake, P. Finlay, P.E. Garrett, G.F. Grinyer, B. Hyland, B. Jones, J.P. Martin, A.C. Morton, A.A. Phillips, R. Roy, F. Sarazin, N. Starinsky, J.J. Valiente-Dobón, J.C. Waddington & L.M. Watters, *Position sensitivity of the TIGRESS 32-fold segmented HPGe clover detector*, Nuclear Instr. and Methods A540, 348-360, 2005.

## Posters & Unrefereed Publications

*Increasing the Number of Underrepresented Minorities in Astronomy: Executive Summary*, D. Norman et al., 2009

*Increasing the Number of Underrepresented Minorities in Astronomy Through K-12 Education and Public Outreach (Paper II)*, D. Norman et al., 2009

*Increasing the Number of Underrepresented Minorities in Astronomy at the Undergraduate, Graduate, and Postdoctoral Levels (Paper I)*, D. Norman et al., 2009

*Transits and Secondary Eclipses of HD 189733b with Spitzer*, E. Agol et al., talk for IAU Transiting Planets Symposium 2008 (Cambridge, MA).

*Mapping Exoplanets with Phase Variations*, N.B. Cowan & E. Agol, poster for IAU Transiting Planets Symposium 2008 (Cambridge, MA).

*Pre-MAP: A Case Study in Evaluating Astronomy Diversity Efforts*, D. Haggard, S. Garner & N.B. Cowan, article in *Spectrum* (June 2008)

*When Galaxies Collide*, N.B. Cowan, poster for Astrobiology Graduate Student Conference 2008 (Santa Clara, CA).

*Observations of Extrasolar Planets During the non-Cryogenic Spitzer Space Telescope Mission*, D. Deming et al., 2007, AIP Conference Proceedings, 943, 89.

*Comparative Climatology: a Toy Model for interpreting IR Photometry of Hot Jupiters*, N.B. Cowan, E. Agol

& D. Charbonneau, poster for Extreme Solar Systems 2007 (Santorini, GR).

*Detection and Characterization of Extrasolar Planets Using the Spitzer Space Telescope*, D. Deming et al., white paper for the NASA Exoplanets Taskforce.

*Galaxy Environments in SDSS*, N.B. Cowan & Ž. Ivezić, poster for A New Zeal for Old Galaxies 2007 (Rotorua, NZ).

*Hot Nights on Extrasolar Planets*, N.B. Cowan, E. Agol & D. Charbonneau, poster for American Astronomical Society Meeting 2007 (Seattle, WA).

*Thermal Emission of Hot Jupiters*, N.B. Cowan, E. Agol & D. Charbonneau, poster for Astrobiology Science Conference 2006 (Washington, DC).

## References

**Eric Agol** (agol@astro.washington.edu)  
Assistant Professor of Astronomy, University of Washington

**David Charbonneau** (dcharbonneau@cfa.harvard.edu)  
Thomas D. Cabot Associate Professor of Astronomy, Harvard University

**Drake Deming** (Leo.D.Deming@nasa.gov)  
Senior Scientist in the Solar System Exploration Division, NASA Goddard Space Flight Center

**Victoria Meadows** (vsm@astro.washington.edu)  
Assistant Professor of Astronomy, University of Washington