

Charles W. Danforth

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Education

- PH.D. 2003 **Johns Hopkins University**, Baltimore, MD
Thesis: “*Interstellar Matter Kinematics in the Magellanic Clouds*”
Advisor: Dr. William P. Blair
- M.A. 2000 **Johns Hopkins University**, Baltimore, MD
- B.A. 1995 **Swarthmore College**, Swarthmore, PA.
Major: *Astrophysics*

Research Interests

- Observational Cosmology
- Intergalactic Matter
- Galaxy-IGM Feedback
- Active Galactic Nuclei
- Interstellar Matter
- Galactic Structure and Dynamics

Research Experience

SENIOR RESEARCH ASSOCIATE, **University of Colorado** (2007–present). Continued projects on observational cosmology, quasar absorption line systems, low-redshift IGM surveys, the “missing baryon problem”, AGN structure, He II reionization, Galactic halo interactions, and IGM/galaxy feedback. Member of the Cosmic Origins Spectrograph science team and early release observations team. Extensive collaboration with cosmological theorists. Mentoring of several students on related research projects (see below).

POSTDOCTORAL RESEARCH ASSOCIATE, **University of Colorado** (2003–2007). Research on interstellar and intergalactic matter. Extensive data reduction, analysis, software development, and database creation of quasar absorption line data from *HST* and *FUSE*. Research mentoring of several undergraduate researchers.

GRADUATE RESEARCH ASSISTANT, **Johns Hopkins University** (1997–2003). Ph.D. Thesis research on the kinematics and structure of interstellar matter (ISM) of the Magellanic Clouds, particularly ultraviolet and optical observations of supernova remnants, superbubbles, and H II regions, and how these structures interact with and shape the global properties of the ISM.

Teaching Experience

UNDERGRADUATE RESEARCH MENTORING, **University of Colorado**

- **Matthew Stevens** (2009–present): UV spectral energy distribution of AGN; ionization and metallicity of high-velocity cloud Complex C. (*U. Colorado undergrad*)
- **Teresa Ross** (2008–2009): Survey of low-ionization metal absorbers in the intergalactic medium (*grad student, New Mexico State U.*)
- **Jennifer (Westbrook) Jones** (2006–2008): Metallicity and ionization state of the Galactic halo (*grad student, Michigan State U.*)
- **Kristen (Gillmon) Adams** (2003–2005): H₂ in the Galactic halo; H₂ and dust in the IR cirrus (*grad student, U. C. Berkeley*)

TEACHING ASSISTANT, “Astronomy” for **Center for Talented Youth ’99** at Johns Hopkins (1999). Summer program giving gifted middle and high school students from around the country a chance to experience a college-level class in a collegiate environment.

TEACHING ASSISTANT, **Johns Hopkins University** (1996–97). “Introductory Physics for Engineering and Physics Majors”. Recitation and Laboratory sections twice/week.

Observational Experience and Grant Involvement

- Co-investigator on numerous **Hubble Space Telescope** spectroscopy and imaging programs
- Principal Investigator of three **Far Ultraviolet Spectroscopic Explorer** programs (~\$80k in total), Co-I on numerous others
- Principal Investigator of two successful **Spitzer Space Telescope** imaging proposals (MIPS, IRAC); Cy4 (\$63,000) and Cy5 (\$95,000)
- Co-I on three **Chandra X-ray Observatory** programs (2009-2011)
- **Cosmic Origins Spectrograph** Science Team (2009-present)
- **HST/SM4** Early Release Observations Team (2009)
- Extensive **optical ground-based observing** at Kitt Peak National Observatory and Cerro Tololo Inter-American Observatory as well as numerous university-level telescopes

Professional Organizations, Service & Recognition

- **Panel Member** HST Time Allocation Committee (2010)
- **Referee** for numerous articles in *ApJ* and *PASP* (2003–present)
- **Colloquium speaker** KIPAC/Stanford University (2010), U. Wyoming (2004)
- **Invited speaker** at *AAS/HEAD 2010: Finding the Missing Baryons Special Session* (2010, Hawai’i), *Chemical Enrichment Across Cosmic Time* (2009, Leiden, NL) *Future of UV Spectroscopy* (2008, Maryland)
- **Committee Member** for two U. Colorado grad students’ comprehensive exams
- “Exceptional” rating (2009-2010, CASA, U. Colorado)
- **Member** *American Astronomical Society* (1997–present); served as **oral session chair** at numerous general meetings

Professional References

Prof. J. Michael Shull

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Prof. James Green

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Prof. John T. Stocke

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Dr. William P. Blair

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Prof. Eric Perlman

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