

RESUMÉ OF KENNETH W. CAVAGNOLO

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Education **Michigan State University** 2005 - Present

Ph.D. Astrophysics, Expected May-August 2008
 Thesis Title: “Virialization, Entropy, and Feedback in Clusters of Galaxies”
 Thesis Advisors: Dr. Megan Donahue & Dr. G. Mark Voit

Michigan State University 2002 - 2005

M.S. Astrophysics

Georgia Institute of Technology 1998 - 2002

B.S. Physics *Cum Laude*

Research **Graduate Research Assistant** 2003 - Present

Experience Supervisor: Dr. Megan Donahue, *Mich. St. Univ.*
 Studying clusters of galaxies via their X-ray properties to
 investigate feedback mechanisms, galaxy evolution, and the process
 of cluster virialization.

Graduate Research Assistant 2002 - 2003

Supervisor: Dr. Jack Baldwin, *Mich. St. Univ.*
 Analyzing echelle spectra for use in studies of *s*-process abundances
 in planetary nebulae.

Undergraduate Research Assistant 2000 - 2002

Supervisor: Dr. James Sowell, *Georgia Tech*
 Obtaining orbital solution for the eclipsing Algol binary ET Tau via
 UVB light curves and spectroscopic radial velocity curves.

- Research** • FEEDBACK MECHANISMS IN GALAXY CLUSTERS
Interests • GALAXY FORMATION
 • SUPERMASSIVE BLACK HOLES
 • AGN ACCRETION PHYSICS
 • LARGE SCALE STRUCTURE FORMATION AND COSMOLOGY

Teaching **Substitute Instructor** Fall 2006

Experience Course: “Visions of the Universe”
 Gave lectures covering stellar evolution, supernovae, white dwarves,
 neutron stars, and black holes.

Physics Tutor

Summer 2003

Course: “Introductory Honors Physics I & II”

Tutored physics students taking introductory physics courses such as classical mechanics, optics, and electromagnetism.

Graduate Teaching Assistant

2002 - 2003

Course: “Visions of the Universe”

Directed and supervised laboratories for non-calculus based astronomy course.

Honors

- College of Natural Science Dissertation Fellow 2007 - Present
- American Astronomical Society Member 2002 - Present
- American Physical Society Member 2002 - Present
- NASA Center for Astronomy Education Participant 2007
- Sigma Pi Sigma National Honor Society 2001 - Present
- Dean’s List, Georgia Tech 1998-2002

Scientific Skills

- Profound skills in reducing and analyzing data taken with *Chandra* X-ray Telescope.
- Extensive experience with CIAO and CALDB.
- Familiarity with multiwavelength analysis packages: AIPS, IRAF, and PyRAF.
- Fluent in Perl, IDL, LaTeX, and HTML.
- Working knowledge of Bash, C, CSH, Flash, Fortran, MySQL, and Supermongo.
- Mastery of multiple computing architectures: UNIX/Linux, Macintosh, and Windows.
- Expert of computer troubleshooting, maintenance, and system construction.

First Author Refereed Papers*“Feedback Mechanisms in Galaxy Clusters and Alteration of ICM Entropy”***Cavagnolo, Kenneth W.**; Donahue, Megan; and Voit, G. Mark

2008, in prep. for ApJ

*“Star Formation in BCGs: Resurrecting Conduction”***Cavagnolo, Kenneth W.**; Donahue, Megan; and Voit, G. Mark

2008, in prep. for ApJ Letters

*“Athenaeum of Galaxy Cluster Entropy Profiles”***Cavagnolo, Kenneth W.**; Donahue, Megan; Voit, G. Mark; and Sun, Ming

2007, near ApJ Supplement submission

*“X-ray Band Dependence of X-ray Temperatures in Galaxy Clusters”***Cavagnolo, Kenneth W.**; Donahue, Megan; Voit, G. Mark; and Sun, Ming

2007, ApJ submitted

Other Refereed Papers*“Star Formation, Radio Sources, Cooling X-Ray Gas and Galaxy Interactions in the Brightest Cluster Galaxy in 2A0335+096”*Donahue, Megan; Sun, Ming; O’Dea, Christopher P.; Voit, G. Mark; **Cavagnolo, Kenneth W.**[2007AJ....134...14D](#)*“Entropy Profiles in the Cores of Cooling Flow Clusters of Galaxies”*Donahue, Megan; Horner, Donald J.; **Cavagnolo, Kenneth W.**; Voit, G. Mark[2006ApJ...643..730D](#)

“s-Process Abundances in Planetary Nebulae”

Sharpee, Brian; Zhang, Yong; Williams, Robert; Pellegrini, Eric; **Cavagnolo, Kenneth**;
Baldwin, Jack A.; Phillips, Mark; Liu, Xiao-Wei

[2007ApJ...659.1265S](#)

**Presented
Work
& Talks**

“Library of Galaxy Cluster Entropy Profiles: A Study in Feedback”

Cavagnolo, Kenneth W.; Donahue, Megan; Voit, G. Mark; and Sun, Ming
2008 Winter Meeting of the American Astronomical Society, Poster

“Band Dependence of X-ray Temperatures”

[2007 University of Michigan Astrophysics Seminar, Invited Talk](#)

“The Entropy-Feedback Connection and Quantifying Cluster Virialization”

Cavagnolo, Kenneth W.; Donahue, Megan; Voit, G. Mark; and Sun, Ming
[2007 Eight Years of Science with Chandra Symposium, Poster](#)

“Chandra Studies of Dark Matter and Galaxy Formation: Signatures from the Intracuster Medium”

Donahue, Megan; Sun, M.; **Cavagnolo, K.**; Voit, G.

[2006 Winter Meeting of the American Astronomical Society, Poster](#)

“Abundances of s-process elements in planetary nebulae: Br, Kr & Xe”

Zhang, Y.; Williams, R.; Pellegrini, E.; **Cavagnolo, K.**; Baldwin, J. A.; Sharpee, B.;
Phillips, M.; Liu, X.-W.

[2006 IAU Symposium, Proceeding](#)

“Studies of Entropy Distributions in X-ray Luminous Clusters of Galaxies”

Cavagnolo, K. W.; Donahue, M. E.; Voit, G. M.; Sun, M.; Evrard, A. E.

[2005 Winter Meeting of the American Astronomical Society, Poster](#)

“Entropy Distributions in the Cores of Nearby X-ray Luminous Clusters of Galaxies”

Cavagnolo, K. W.; Donahue, M. E.; Voit, G. M.; Horner, D. J.; Evrard, A. E.

[2004 Winter Meeting of the American Astronomical Society, Poster](#)

“Radio-Free Cluster Cooling Flows”

Donahue, M. E.; Voit, G. M.; **Cavagnolo, K.**

[2004 Winter Meeting of the American Astronomical Society, Poster](#)

References

DR. MEGAN DONAHUE

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DR. G. MARK VOIT

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DR. JACK BALDWIN
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**Personal
Interests**

- Academic: environmental sciences, “Cradle2Cradle” design, and urban planning.
- Athletics: triathlons, baseball, and everything Georgia Tech.
- Hobbies: reading, building model airplanes, and raising bonsai trees.