

KENNETH W. CAVAGNOLO

RESUMÉ

Office Address

Michigan State University
 Department of Physics & Astronomy
 3265 Biomedical Physical Sciences Building
 East Lansing, MI 48824-2320

Contact Information

1111 Kimberly Dr. Apt. #7
 Lansing, MI 48912
 Phone: (517)-285-9062
 E-mail: kencavagnolo@gmail.com
 Web: www.pa.msu.edu/people/cavagnolo/

Education **Michigan State University** 2005 - Present
 Ph.D. Astrophysics, Expected August 2008
 Thesis Title: “Virialization, Entropy, & Feedback in Clusters of Galaxies”
 Advisors: Dr. Megan Donahue & Dr. G. Mark Voit

Michigan State University 2002 - 2005
 M.S. Astrophysics, *Magna Cum Laude*
 Dissertation Title: “Entropy Profiles of Cooling Flow Clusters”
 Advisor: Dr. Megan Donahue

Georgia Institute of Technology 1998 - 2002
 B.S. Physics, *Magna Cum Laude*
 Senior Thesis: “Analysis of the Eclipsing Binary ET Tau”
 Advisor: Dr. James Sowell

Research Experience **Graduate Research Assistant** 2003 - Present
 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 UBV light curves and spectroscopic radial velocity curves.

Research Interests

- Renewable Energy
- Sustainable Growth
- Closed Loop Manufacturing
- Environmental Policy
- Global Climate Change

Teaching Experience	Substitute Instructor	Fall 2006
	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
	• 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 <i>Chandra</i> X-ray Telescope.	
	• Extensive experience with customizing and debugging CIAO and CALDB.	
	• Familiarity with multiwavelength analysis packages: AIPS, IRAF, and PYRAF.	
	• Fluent in PERL, IDL, \LaTeX and HTML.	
	• Working knowledge of C, FLASH, FORTRAN, MYSQL, SUPERMONGO, and TCL.	
	• Mastery of multiple computing architectures: DOS, Linux, Macintosh, and Windows.	
	• Expert of computer troubleshooting, maintenance, and system construction.	
References	DR. MEGAN DONAHUE (517)-355-9200 ext. 2418 donahue@pa.msu.edu Michigan State University	
	DR. G. MARK VOIT (517)-355-9200 ext. 2419 voit@pa.msu.edu Michigan State University	
	DR. JACK BALDWIN (517)-355-9200 ext. 2411 baldwin@pa.msu.edu Michigan State University	

First Author Refereed Papers	<p><i>“X-ray and Entropy Scaling Relations in Galaxy Clusters”</i> Cavagnolo, Kenneth W.; Voit, G. Mark; and Donahue, Megan 2008, in prep. for Astrophysical Journal</p> <p><i>“Feedback Mechanisms in Galaxy Clusters and Alteration of ICM Entropy”</i> Cavagnolo, Kenneth W.; Donahue, Megan; and Voit, G. Mark 2008, in prep. for Astrophysical Journal</p> <p><i>“Star Formation in BCGs: Resurrecting Conduction”</i> Cavagnolo, Kenneth W.; Donahue, Megan; and Voit, G. Mark 2008, near Astrophysical Journal Letters submission</p> <p><i>“Athenaeum of Galaxy Cluster Entropy Profiles”</i> Cavagnolo, Kenneth W.; Donahue, Megan; Voit, G. Mark; and Sun, Ming 2007, Astrophysical Journal Supplement submitted</p> <p><i>“X-ray Band Dependence of X-ray Temperatures in Galaxy Clusters”</i> Cavagnolo, Kenneth W.; Donahue, Megan; Voit, G. Mark; and Sun, Ming 2007, Astrophysical Journal submitted</p>
Other Refereed Papers	<p><i>“Star Formation, Radio Sources, Cooling X-Ray Gas and Galaxy Interactions in the Brightest Cluster Galaxy in 2A0335+096”</i> Donahue, Megan; Sun, Ming; O’Dea, Christopher P.; Voit, G. Mark; Cavagnolo, Kenneth W. 2007AJ....134...14D</p> <p><i>“Entropy Profiles in the Cores of Cooling Flow Clusters of Galaxies”</i> Donahue, Megan; Horner, Donald J.; Cavagnolo, Kenneth W.; Voit, G. Mark 2006ApJ...643..730D</p> <p><i>“s-Process Abundances in Planetary Nebulae”</i> Sharpee, Brian; Zhang, Yong; Williams, Robert; Pellegrini, Eric; Cavagnolo, Kenneth; Baldwin, Jack A.; Phillips, Mark; Liu, Xiao-Wei 2007ApJ...659.1265S</p>
Presented Work & Talks	<p>INVITED TALK: <i>“The Effect of Cluster Feedback on High-Precision Cosmology”</i> Feb. 2008 – NASA National Space Science and Technology Center, UAH-Huntsville</p> <p>INVITED TALK: <i>“Understanding Feedback in Galaxy Clusters”</i> Jan. 2008 Center for Study of Cosmic Evolution Seminar, Michigan State University</p> <p>INVITED TALK: <i>“Band Dependence of X-ray Temperatures”</i> Oct. 2007 University of Michigan Astrophysics Seminar</p> <p>POSTER: <i>“The Entropy-Feedback Connection and Quantifying Cluster Virialization”</i> Cavagnolo, Kenneth W.; Donahue, Megan; Voit, G. Mark; and Sun, Ming 2007 Eight Years of Science with Chandra Symposium</p> <p>POSTER: <i>“Chandra Studies of Dark Matter and Galaxy Formation: Signatures from the Intracluster Medium”</i></p>

Donahue, Megan; Sun, M.; **Cavagnolo, K.**; Voit, G.
[2006 Winter Meeting of the American Astronomical Society](#)

PROCEEDING: “*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](#)

POSTER: “*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](#)

**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.