

# KENNETH W. CAVAGNOLO

## CURRICULUM VITAE

---

### Office Address

Michigan State University  
 Department of Physics & Astronomy  
 3265 Biomedical Physical Sciences Building  
 East Lansing, MI 48823-2320

### Contact Information

Office: (517)-355-9200 ext.2443  
 Home: (517)-285-9062  
 E-mail: [cavagnolo@pa.msu.edu](mailto:cavagnolo@pa.msu.edu)  
 Web: [www.pa.msu.edu/people/cavagnolo/](http://www.pa.msu.edu/people/cavagnolo/)

<b>Education</b>	<b>Michigan State University</b> 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
	<b>Michigan State University</b> 2002 - 2005 M.S. Astrophysics, <i>Magna Cum Laude</i> Dissertation Title: "Entropy Profiles of Cooling Flow Clusters" Advisor: Dr. Megan Donahue
	<b>Georgia Institute of Technology</b> 1998 - 2002 B.S. Physics, <i>Magna Cum Laude</i> Senior Thesis: "Analysis of the Eclipsing Binary ET Tau" Advisor: Dr. James Sowell
<b>Research Experience</b>	<b>Supermassive Cluster Survey, Member</b> 2007 - Present Lead: Dr. Rachel Mandelbaum, <i>IoA</i> Weak lensing collaboration to measure the scatter between X-ray observables and true projected mass.
	<b>Graduate Research Assistant</b> 2003 - Present Supervisor: Dr. Megan Donahue, <i>Mich. St. Univ.</i> Studying clusters of galaxies via their X-ray properties to investigate feedback mechanisms, galaxy evolution, and the process of cluster virialization.
	<b>Graduate Research Assistant</b> 2002 - 2003 Supervisor: Dr. Jack Baldwin, <i>Mich. St. Univ.</i> Analyzing echelle spectra for use in studies of <i>s</i> -process abundances in planetary nebulae.
	<b>Undergraduate Research Assistant</b> 2000 - 2002 Supervisor: Dr. James Sowell, <i>Georgia Tech</i> Obtaining orbital solution for the eclipsing Algol binary ET Tau via UVB light curves and spectroscopic radial velocity curves.

<b>Research Interests</b>	<ul style="list-style-type: none"> <li>• Large Scale Structure Formation and Cosmology</li> <li>• Galaxy Cluster Evolution</li> <li>• Feedback Mechanisms in Galaxy Clusters</li> <li>• Sunyaev-Zel'dovich Effect</li> <li>• Galaxy Formation</li> </ul>	
<b>Teaching Experience</b>	<p><b>Substitute Instructor</b> <span style="float: right;">Fall 2006</span></p> <p>Course: "Visions of the Universe"</p> <p>Gave lectures covering stellar evolution, supernovae, white dwarves, neutron stars, and black holes.</p> <p><b>Physics Tutor</b> <span style="float: right;">Summer 2003</span></p> <p>Course: "Introductory Honors Physics I &amp; II"</p> <p>Tutored physics students taking introductory physics courses such as classical mechanics, optics, and electromagnetism.</p> <p><b>Graduate Teaching Assistant</b> <span style="float: right;">2002 - 2003</span></p> <p>Course: "Visions of the Universe"</p> <p>Directed and supervised laboratories for non-calculus based astronomy course.</p>	
<b>Honors</b>	<ul style="list-style-type: none"> <li>• MSU College of Natural Science Dissertation Fellow <span style="float: right;">2007 - Present</span></li> <li>• American Astronomical Society Member <span style="float: right;">2002 - Present</span></li> <li>• American Physical Society Member <span style="float: right;">2002 - Present</span></li> <li>• Sigma Pi Sigma National Honor Society <span style="float: right;">2001 - Present</span></li> <li>• Dean's List, Georgia Tech <span style="float: right;">1998-2002</span></li> </ul>	
<b>Scientific Skills</b>	<ul style="list-style-type: none"> <li>• Profound skills in reducing and analyzing data taken with <i>Chandra</i> X-ray Telescope.</li> <li>• Extensive experience with customizing and debugging CIAO and CALDB.</li> <li>• Familiarity with multiwavelength analysis packages: AIPS, IRAF, and PYRAF.</li> <li>• Fluent in PERL, IDL, <math>\text{\LaTeX}</math> and HTML.</li> <li>• Working knowledge of C, FLASH, FORTRAN, MYSQL, SUPERMONGO, and TCL.</li> <li>• Mastery of multiple computing architectures: DOS, Linux, Macintosh, and Windows.</li> <li>• Expert of computer troubleshooting, maintenance, and system construction.</li> </ul>	
<b>References</b>	<p>DR. MEGAN DONAHUE  (517)-355-9200 ext. 2418  <a href="mailto:donahue@pa.msu.edu">donahue@pa.msu.edu</a>  Michigan State University</p> <p>DR. G. MARK VOIT  (517)-355-9200 ext. 2419  <a href="mailto:voit@pa.msu.edu">voit@pa.msu.edu</a>  Michigan State University</p> <p>DR. JACK BALDWIN  (517)-355-9200 ext. 2411</p>	

[baldwin@pa.msu.edu](mailto:baldwin@pa.msu.edu)

Michigan State University

**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.