

Dr. Kenneth W. Cavagnolo Curriculum Vitae

Last updated January 1, 2010; [Hyperlinks colored blue](#)

University of Waterloo Department of Physics & Astronomy 200 University Avenue West Waterloo, Ontario, Canada N2L 3G1		517-285-9062 519-888-4567 ext. 35074 kencavagnolo@gmail.com www.pa.msu.edu/people/cavagnolo/
Education	Michigan State University Doctor of Philosophy, Astronomy & Astrophysics	2005 - 2008
	Michigan State University Master of Science, Astronomy & Astrophysics	2002 - 2005
	Georgia Institute of Technology Bachelor of Science, Physics	1998 - 2002
Research Experience	Postdoctoral Fellow Supervisor: Brian McNamara, <i>Univ. of Waterloo</i>	2008 - Present
	Graduate Research Assistant Supervisor: Megan Donahue, <i>Mich. St. Univ.</i>	2003 - 2008
	Graduate Research Assistant Supervisor: Jack Baldwin, <i>Mich. St. Univ.</i>	2002 - 2003
	Undergraduate Research Assistant Supervisor: James Sowell, <i>Geor. Inst. of Tech.</i>	2000 - 2002
Research Program & Interests	<p>My research program is focused on better understanding the formation and evolution of cosmic structure via physical properties of the most massive gravitationally-bound objects (galaxy groups and clusters) and their sub-systems, <i>e.g.</i> galaxies, supermassive black holes, active galactic nuclei & jets, and thermal instabilities (<i>i.e.</i> gaseous nebulae, star formation, gas accretion).</p> <p>Additional areas of interest:</p> <ul style="list-style-type: none"> • Intracluster medium magnetic fields • Diffuse radio halos • Mechanical and radiative AGN feedback • Cosmological studies via structure formation 	
Honors	<ul style="list-style-type: none"> • Referee for ApJ, AJ, and CanTAC • Sherwood K. Haynes Award for Outstanding Graduate Student • MSU College of Natural Science Dissertation Fellow • ΣΞ National Scientific Research Society Member 	2008 - Present 2008 2007 - 2008 2009 - Present

- ΣΠΣ National Physics Honor Society Member 2001 - Present
- American Astronomical Society Member 2002 - Present
- American Physical Society Member 2002 - Present
- Perimeter Institute Black Hole Reading Group Member 2009 - Present
- Dean's List, Georgia Tech 1998-2002

Scientific Skills

- Extensive experience with X-ray and radio data analysis
- Familiarity with infrared, optical, and UV data analysis
- Understanding of AIPS, CASA, CIAO, IRAF, OSA, and SAS analysis software
- Fluent in HTML, IDL, L^AT_EX, and PERL programming languages
- Worked with C, FLASH, FORTRAN, MYSQL, PYTHON, SUPERMONGO, and TCL
- Mastery of DOS, Linux, Macintosh, and Windows computing architectures
- Expert of computer maintenance, system construction, and troubleshooting

Observing Experience

- Giant Metrewave Radio Telescope (GMRT) Jan. 2010
168 hours observing 13 galaxy groups and 20 galaxy clusters
- Chandra X-ray Observatory (CXO) Jan. 2009
21 hours queued observation of IRAS 09104+4109
- Very Large Array Radio Telescope (VLA) Dec. 2008
39 hours observing 13 giant ellipticals

Accepted Proposals & Grants

- GMRT Cycle 17, Co-I 2009
The Power and Particle Content of Extragalactic Radio Sources
PI: Somak Raychaudhury, *Univ. Birmingham*
- GMRT Cycle 17, Co-I 2009
The Morphology of Steepest Spectrum Radio Sources in Galaxy Cluster Cores
PI: Alastair Edge, *Durham Univ.*
- NOAO Cycle 2008A & 2009A/B, Co-I 2008-2009
Normalization and scatter of the $M - T$ relation for supermassive galaxy clusters
PI: Rachel Mandelbaum, *Inst. for Adv. Study*
- GMRT Cycle 16, Co-I 2008
The Content of Giant Cavities in the IGM of Galaxy Clusters
PI: Somak Raychaudhury, *Univ. Birmingham*
- CXO Cycle 10, PI 2008
IRAS 09104+4109: An Extreme Brightest Cluster Galaxy
- CXO Cycle 10, Co-I 2008
Conduction and Multiphase Structure in the ICM
PI: Mark Voit, *Mich. St. Univ.*
- Spitzer Cycle 5, Co-I 2008
Star Formation and AGN Feedback in BCGs
PI: Megan Donahue, *Mich. St. Univ.*

	Spitzer Cycle 5, Co-I Infrared Properties of a Control Sample of Brightest Cluster Galaxies PI: Megan Donahue, <i>Mich. St. Univ.</i>	2008
	NSF Grant, Co-I Star Formation in the Universe's Largest Galaxies PI: Mark Voit, <i>Mich. St. Univ.</i>	2008
	CXO Cycle 9, Co-I Quantifying Cluster Temperature Substructure PI: Mark Voit, <i>Mich. St. Univ.</i>	2007
	VLA A-configuration Cycle, Co-I Radio Feedback in Clusters and Galaxies PI: Brian McNamara, <i>Univ. Waterloo</i>	2007
Teaching Experience	Substitute Instructor Course: "Visions of the Universe"	Fall 2006
	Honors Physics Tutor Course: "Introductory Honors Physics I & II"	Summer 2003
	Graduate Teaching Assistant Course: "Visions of the Universe"	2002 - 2003
References	Megan Donahue, donahue@pa.msu.edu Tenured professor, Michigan State University	+00-1-517-884-5618
	Brian McNamara, mcnamara@uwaterloo.ca Tenured professor, University of Waterloo	+00-1-519-888-4567 ext. 38170
	G. Mark Voit, voit@pa.msu.edu Tenured professor, Michigan State University	+00-1-517-884-5619
	Chris Carilli, ccarilli@nrao.edu National Radio Astronomy Observatory Chief Scientist	+00-1-505-835-7000
	Jack Baldwin, baldwin@pa.msu.edu Associate Chair for Astronomy, Michigan State University	+00-1-517-884-5611
	Paul Nulsen, pnulsen@cfa.harvard.edu Research Scientist, Center for Astrophysics at Harvard University	+00-1-617-495-7043
	Mike Wise, wise@science.uva.nl LOFAR Radio Observatory Chief Scientist	+31-0-521-595-564
Personal Interests	<ul style="list-style-type: none"> • Academic: Environmental sciences, "Cradle2Cradle" design, and urban planning. • Athletics: Triathlons, baseball, rock climbing, and Georgia Tech athletics. • Hobbies: Backpacking, reading, building model airplanes, and raising bonsai trees. 	