

# Andisheh Mahdavi

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## RESEARCH INTERESTS

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*The Composition of the Largest Structures in the Universe.* Plasma and dark matter physics in groups and clusters of galaxies from X-ray, optical, and radio data. Joint analysis of stellar dynamical, hydrodynamical, gravitational lensing, and Sunyaev-Zel'dovich mass estimators. Analysis of supercomputer simulations of the cosmos.

## EDUCATION

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*Harvard University*, Ph. D. in Astronomy and Astrophysics, November 2001. Supervisor: Dr. Margaret Geller  
*Harvard University*, M.S. in Astronomy and Astrophysics, June 1998. Supervisor: Dr. Margaret Geller  
*Harvard University*, B. A. *magna cum laude* in Astronomy and Astrophysics, June 1995.

## POSITIONS

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*SF State University*, San Francisco, CA, 8/14- Associate Professor of Physics and Astronomy.  
*UC Santa Barbara*, Santa Barbara, CA, 3/11-4/11 Visiting Scholar  
*SF State University*, San Francisco, CA, 9/08-8/14 Assistant Professor of Physics and Astronomy.  
*University of Victoria*, Victoria, B.C., 2005-2008 Postdoctoral Fellow.  
*University of Hawaii*, Honolulu, HI, 2001-2005 Chandra Postdoctoral Fellow.  
*Harvard University*, Cambridge, MA 1996-2001 Graduate student researcher.  
*Max-Planck-Institut für Extraterrestrische Physik*, Garching, Germany 1995-96 Fulbright Scholar.  
*Harvard University*, Cambridge, MA 1993-95, Undergraduate researcher.

## AWARDS AND HONORS

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*SF State Presidential Award for Professional Development*, 2011  
*CSU Summer Stipend*, 2010  
*Chandra Postdoctoral Fellowship, NASA*, 2001-2004  
*National Science Foundation Graduate Fellowship*, 1996-1999  
*Harvard CUE Excellence in Teaching Award*, 1997  
*United States Fulbright Grant*, 1995-96  
*Goldberg Prize*, 1995, for best Astronomy senior thesis  
*Hoopes Prize*, 1995, college-wide award for outstanding thesis

## FUNDED GRANTS AS PI OR PRIMARY AUTHOR

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*Proposal to Fund the SnowCluster Galaxy Cluster Meeting*, NSF, \$20K, 2014

*Joint Multiwavelength Measurements of the Matter Distribution in Clusters of Galaxies*, (PI) NASA ADAP, \$420K, 2012-

*Power Ratios in Clusters of Galaxies*, (PI) NASA/Chandra, \$57K, 2009-2011

*A Dark Core in Abell 520*, NASA/Hubble, \$59K, 2008-2010

*An X-ray Tail in the NGC 1407/1400 Group*, (PI) NASA/XMM, \$87K, 2005-2006

*X-ray Observations of GK/GI Tauri*, (PI) NASA/Chandra, \$46K, 2003-2004

*Temperatures of Low Velocity Dispersion Galaxy Groups*, (PI) NASA/XMM, \$70K, 2003-2004

*Temperatures of Low Velocity Dispersion Galaxy Groups*, NASA/Chandra, \$35K, 2002-2003

## LECTURE COURSES

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*ASTR 115 Introduction to Astronomy (for non-majors)*, Average student rating 1.96/5 (lower is better)

*ASTR 340 The Big Bang (for juniors)*, Average student rating 1.35/5 (lower is better)

*PHYS 725 General Relativity (graduate)*, (Average student rating 1.23/5 (lower is better)

*PHYS 701 Classical Mechanics (graduate)*, Average student rating 2.01/5 (lower is better)

*ASTR 722 Radiative Processes & Gas Dynamics (graduate)*, Average student rating 1.24/5 (lower is better)

Recent departmental averages: 2.03 (F11); 1.84 (F12); 1.73 (S13)

## STUDENT SUPERVISION

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*Allan Gamboa*, MS, "Testing hydrostatic equilibrium in supercomputer simulations of galaxy clusters," Spring 2013-; ongoing

*Angela Berti*, MS, "Gravitational lensing observations of galaxy clusters" Spring 2013-; **now PhD student at UCSD**

*Tyler Chapman*, MS, "Massive parallelization of integrals involving the triaxial structure of clusters of galaxies," Fall 2010-2012; **now engineer at Yahoo!**

*Riley Williams*, MS, "Plasma and Thermal Conduction in Galaxy Clusters", Fall 2012-2013; **now PhD student at U Washington**

*Stephanie Lauber*, BS, "Luminosity Function of Galaxies in the Abell 520 Cluster", Fall 2012-Spring 2013 **now MS student at San Diego State**

*Daniel Hakim*, MS, "The Stellar Content of Brightest Cluster Galaxies as viewed by Hubble," Fall 2010-

*Mayra Thibodeaux*, BS, "The Stellar Content of Brightest Cluster Galaxies as viewed by Hubble," Fall 2010-2012 **Now working at LBL direct dark matter detection lab**

*Priyanjoli Mukherjee*, MS, "Centroiding of galaxy clusters," Fall 2010-

*Jason Smith*, BS and MS, "Triaxial models of relaxed Galaxy Clusters," Fall 2010-

*Weihan Chang*, undergraduate, "Combining X-ray and SZ Observations of Non-relaxed Galaxy Clusters," Fall 2009-

*Tun Win*, MS, "X-ray mass profiles for nearby massive clusters of galaxies," Summer 2009 **Now working in information technology**

*Michelle Krok*, MS, "The Mass-concentration relation from X-ray and weak lensing data," Fall 2008-2009

**Now Ph. D. student in science education at U. Alabama**

*Alison Mansheim*, MS, "A dynamical code for the Joint Analysis of Cluster Observations," Master's Thesis, Fall 2008-Spring 2009 **Now graduate student at UC Davis**

## CURRICULAR INNOVATIONS

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*ASTR340*, Design and teaching of unique history of cosmology GVAR course, 2010-  
*Curved Surface*, Design and commissioning of crafted surface for teaching non-Euclidean Geometry, 2009-  
*M.S. with concentration in Astronomy Degree*, Initiated idea and created draft proposal, 2009-

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## **DEPARTMENTAL COMMITTEES AND ASSIGNMENTS**

*Astronomy Curriculum Committee*, 2009-, Chair (2009)  
*Colloquium organizer*, 2008-2010  
*Faculty Search Committees*, 2012 and 2013  
*SFSTAR Computer Cluster*, Co-director and maintainer, 2010-  
*Website committee*, Chair, 2008-

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## **COLLEGE COMMITTEES AND ASSIGNMENTS**

*Judge*, COSE Science Fair, 2009 and 2011  
*COSE IT Committee*, 2009-2010  
*COSE Grade Appeal Committee*, 2012-2013

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## **UNIVERSITY COMMITTEES AND ASSIGNMENTS**

*GVAR Summit*, 2010

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## **PROFESSIONAL SERVICE**

*Regular Peer-reviewed Journal Referee*, *Astrophysical Journal*, 1999-, *Monthly Notices*, 2005-, *Astronomy & Astrophysics*, 2006-  
*Telescope Time Allocation Committees*, Chandra X-ray Observatory, Suzaku, 2004-  
*Grant Proposal Review Committees*, NASA, NSF, 2011-  
*Conference Organizer*, 2010 Lorentz Workshop: Weighing Clusters of Galaxies; 2015 SnowCluster Meeting (SOC Chair)  
*Constellation-X/IXO*, Facility Science Team Panel Member, 2008

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## **COMMUNITY SERVICE**

*SF Amateur Astronomical Society*, Public astronomy talk, 2009  
*Mt. Diablo Astronomical Society*, Public astronomy talks, 2011, 2012  
*Cow Hollow Preschool*, Age-appropriate astronomy presentation  
*Kids at SF State Planetarium*, Five separate age-appropriate presentations to first through fifth grade classes from several Bay Area preschools and elementary schools, including visits to schools to prepare students for the presentations

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## **REFERENCES**

*Arif Babul*, University of Victoria, babul@uvic.ca  
*Megan Donahue*, Michigan State University, donahue@pa.msu.edu  
*J. Patrick Henry*, University of Hawaii, henry@ifa.hawaii.edu  
*Henk Hoekstra*, Leiden University, hoekstra@strw.leidenuniv.nl