

# Curriculum Vitae

STEVEN W. ALLEN

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## EMPLOYMENT HISTORY

- 09/08–present : Associate Professor, Department of Physics, Stanford University.
- 09/08–present : Associate Professor, Department of Particle Physics and Astrophysics, SLAC National Accelerator Laboratory.
- 01/05–09/08 : Assistant Professor, Department of Physics, Stanford University.
- 01/05–09/08 : Assistant Professor, Department of Particle Physics and Astrophysics, SLAC National Accelerator Laboratory.
- 10/99–01/05 : Royal Society University Research Fellow, University of Cambridge.
- 10/95–10/99 : Postdoctoral Research Associate, University of Cambridge.
- 10/95–10/98 : Charles & Katherine Darwin Research Fellow, University of Cambridge.
- 11/93–11/95 : Postdoctoral Research Fellow, United Kingdom Particle Physics and Astronomy Research Council (PPARC, formerly SERC).

## ACADEMIC HISTORY

- 1990-1995 : **Ph. D. in Astronomy**, University of Cambridge.  
Advisor: Professor A.C. Fabian FRS, OBE.
- 1987-1990 : **B. Sc. (Hons) in Physics, First Class, Associate of the Royal College of Science**,  
Department of Physics, Imperial College, University of London.

## TEACHING AT STANFORD

- 2011-2014 : **Physics 16:** Cosmic Horizons (Undergraduate).
- 2009-2012 : **Physics 100:** Introduction to Observational Astrophysics (Undergraduate).
- 2010-2011 : **Physics 301:** Introduction to Observational Astrophysics (Graduate).
- 2009-2010 : **Physics 59:** Current Research Topics (Undergraduate).
- 2005-2009 : **Physics 63,64:** Electricity, Magnetism and Waves (Undergraduate).
- 2005-2006 : **Physics 463:** Experimental Cosmology (Graduate).

**Physics 63** and the associated lab course **Physics 64** form the part of the *Advanced Freshman Physics* series at Stanford.

## POSTDOCTORAL SCHOLARS

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- 2012-present : **Irina Zhuravleva**, Stanford University.
- 2012-present : **Julie Hlavacek-Larrondo (Einstein Fellow)**, Stanford University.
- 2012-present : **Rebecca Canning**, Stanford University.
- 2008-present : **Norbert Werner (Einstein Fellow)**, Stanford University.
- 2007-present : **Anja von der Linden (Brahe Fellow)**, Stanford University (joint with University of Copenhagen since Nov 2012).
- 2009-2013 : **Aurora Simionescu (Einstein Fellow)**, Stanford University.
- 2010-2011 : **Tim Schrabback**, Stanford University (with R. Blandford).
- 2006-2010 : **David Rapetti**, Stanford University and SLAC.
- 2000-2003 : **Robert Schmidt**, University of Cambridge (with A. Fabian).

## GRADUATE STUDENTS

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- 2013-present : **Adam Wright**, Stanford University.
- 2011-present : **Ondrej Urban**, Stanford University.
- 2009-2013 : **Steven Ehlert**, Stanford University. ‘The Co-evolution of Galaxies and their Environments in Massive Galaxy Clusters’.
- 2008-2012 : **Patrick Kelly**, Stanford University, ‘Cosmic Stellar Explosions and Galaxy Cluster Weak Gravitational Lensing’ (with D. Burke).
- 2007-2012 : **Douglas Applegate**, Stanford University, ‘Methods and Measurements of Accurate Galaxy Cluster Weak-Lensing Masses’.
- 2006-2010 : **Evan Million**, Stanford University, ‘Astrophysics of the intracluster medium in X-ray bright galaxy clusters’.
- 2005-2009 : **Adam Mantz**, Stanford University, ‘Observations of the growth of X-ray luminous galaxy clusters: cosmological and astrophysical implications’.
- 2004-2006 : **David Rapetti**, University of Barcelona, ‘Probing dark energy with X-ray galaxy clusters, supernovae and the cosmic microwave background’ (with P. Lapuente).

## PROFESSIONAL SERVICE

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- 2012-present : Co-lead, Clusters Working Group, LSST Dark Energy Science Collaboration
- 2010-present : Co-lead, Cosmology, Astro-H Science Working Group
- 2013-present : Member, South Pole Telescope Collaboration.
- 2010-present : Member, Euclid Science Consortium.
- 2012-2013 : Conference SOC: 'KIPAC@10', Stanford, USA, 2013
- 2012 : Editor, eROSITA Science Book
- 2011-2012 : NASA High Energy Astrophysics Division Nominating Committee
- 2008-2011 : Science Definition Team, International X-ray Observatory
- 2008-2011 : Chandra Users' Committee
- 2011 : Einstein Fellowship Selection Committee
- 2010-2011 : Conference SOC: 'DEUS: Current and Future Challenges of the Dark and Early Universes', Copenhagen, Denmark, 2011
- 2010-2011 : Conference SOC: 'Structure in Clusters and Groups of Galaxies in the Chandra Era', Boston, USA, 2011
- 2010 : Conference SOC: 'Experimental and Theoretical Challenges to Probing Dark Energy', Stanford, USA, 2010
- 2008-2009 : Conference SOC: 'Petrosianfest 2009', Stanford, USA, 2009
- 2004-2008 : Constellation-X Facility Science Team
- 2004-2008 : Constellation-X Galaxies and Galaxy Clusters Science Panel
- 2007-2008 : Chair, Constellation-X Large Scale Structure panel
- 2007-2008 : Conference SOC: 'Putting Gravity to Work, Cambridge, UK, 2008
- 2007-2008 : Conference SOC: 'X-ray Universe 2008', Granada, Spain, 2008
- 2007-2008 : Conference SOC: 'Bob Wagoner Invitational', Stanford, USA, 2008
- 2007 : Invited Lecturer: National Research Council Beyond Einstein Assessment Committee
- 2000-2007 : Chandra Peer Review Panel: Cycles 2,3,6,9
- 2003-2004 : Conference SOC: 'Clusters of Galaxies: New Insights from XMM-Newton, Chandra and INTEGRAL', Paris, France, 2004.
- 2002 : External examiner: Ph.D. thesis of Ben Ritchie, University of Sussex

I am a reviewer for astrophysics journals including *Monthly Notices of the Royal Astronomical Society*, *Astronomy and Astrophysics* and *The Astrophysical Journal*. I have reviewed numerous grant proposals for NASA, the United Kingdom Particle Physics and Astronomy Research Council, and occasional grants for other science foundations.

## DEPARTMENTAL/UNIVERSITY SERVICE

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### *Stanford University/SLAC*

- 2009-present : Head of Department, Observational and Experimental Cosmology, SLAC.
- 2012-present : KIPAC Executive Committee
- 2011-present : Graduate Admissions, Stanford Physics Dept.
- 2013-present : Bunyan Lecture Committee
- 2012-2013 : Ph.D. thesis committee: Rachel Reddick, Stanford University
- 2012-2013 : Chair, Graduate Student Recruitment and Orientation, Stanford Physics
- 2012-2013 : Graduate Advisor, Stanford Physics Dept.
- 2011-2013 : Ph.D. thesis committee: Alex Drlica-Wagner, Stanford University
- 2009-2013 : Ph.D. thesis committee: Stephen Osbourne, Stanford University
- 2011-2012 : Reappointment Committee: Ariel Schwartzman, SLAC
- 2011-2012 : Physics Dept. Graduate Qualifying Exam, Stanford University
- 2011-2012 : Ph.D. thesis committee: Keith Bechtol, Stanford University
- 2011-2012 : Ph.D. thesis committee: Peter Behroozi, Stanford University
- 2010-2011 : Graduate Admissions, Stanford Physics Dept.
- 2009-2011 : Bunyan Lecture Committee
- 2008-2011 : Ph.D. thesis committee: Hao-Yi Wu, Stanford University
- 2009-2011 : Ph.D. thesis committee: Ji-hoon Kim, Stanford University
- 2009-2011 : Ph.D. thesis committee: Jane Dai, Stanford University
- 2007-2011 : Ph.D. thesis committee: Yvonne Edmonds, Stanford University
- 2009-2010 : Graduate Advisor, Stanford Physics Dept.
- 2009-2010 : Ph.D. thesis committee: Kyle Watters, Stanford University
- 2005-2009 : Co-chair, KIPAC Research Associate Selection Committee
- 2007-2009 : Undergraduate Studies Committee, Stanford Physics Dept.
- 2008-2009 : Space Committee, Stanford Physics Dept.
- 2007-2009 : Ph.D. thesis committee: Ed Wu, Stanford University
- 2007-2009 : Ph.D. thesis committee: Chen Zheng, Stanford University
- 2008-2009 : Search Committee, Director of Particle Physics and Astrophysics, SLAC
- 2008-2009 : Staff Promotion Review Committee, SLAC
- 2005-2009 : Head of Department, KIPAC-Physics, SLAC.
- 2006-2008 : Ph.D. thesis committee: Mustafa Amin, Stanford University
- 2005-2008 : KIPAC Executive Committee
- 2007-2008 : Endowed Postdoctoral Fellowships Committee, Stanford Physics Dept.
- 2007-2008 : Graduate Advisor, Stanford Physics Dept.
- 2006-2008 : Panofsky Fellowship Selection Committee, SLAC
- 2005-2007 : KIPAC Transition Committee.
- 2005-2007 : Space Committee, Stanford Physics Dept.
- 2006-2007 : DSL Task Force, SLAC
- 2004-2006 : Graduate admissions, Stanford Physics Dept.

### *Cambridge University, UK.*

- 1996-2004 : Health and Safety Committee, Institute of Astronomy, Cambridge
- 1996-1999 : Chair, inter-disciplinary Science Group, Darwin College, Cambridge
- 1996-1999 : Education and Research Committee, Darwin College, Cambridge
- 1996-1999 : Governing Body, Darwin College, Cambridge

# POST-DEGREE HONORS AND AWARDS

## PRIZES AND PRIZE FELLOWSHIPS

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- 2012-2015 : Sophie and Tycho Brahe Visiting Professorship, University of Copenhagen
- 2008 : Bruno Rossi Prize, American Astronomical Society.
- 1999 : Royal Society University Research Fellowship (merit award 2001)
- 1995 : Charles & Katherine Darwin Research Fellowship, University of Cambridge
- 1993 : P.P.A.R.C. (formerly S.E.R.C) Postdoctoral Research Fellowship

The **Sophie and Tycho Brahe Visiting Professorship** is associated with the Dark Cosmology Centre at the Niels Bohr Institute, University of Copenhagen.

The **Bruno Rossi Prize** is awarded annually by the High Energy Astrophysics Division of the American Astronomical Society for “Significant contributions to High Energy Astrophysics, with particular emphasis on recent original work”. I was co-recipient of the 2008 award with J. Patrick Henry, Maxim Markevitch and Alexey Vikhlinin.

**Royal Society University Research Fellowships** are among the most prestigious prize fellowships available for untenured scientists in the United Kingdom. They provide full salary support, indirect costs and research funds for 5 years in the first instance, renewable up to a maximum of 10 years. The Royal Society offers approximately 30 such awards annually across all scientific disciplines, of which one or two might be in the field of astrophysics.

The **Charles and Katherine Darwin Research Fellowship** is awarded annually by Darwin College, Cambridge, United Kingdom. The fellowship is intended for an outstanding researcher who is completing, or has recently completed, their Ph.D. Degree. The competition is unrestricted in terms of subject area.

**Particle Physics and Astronomy Research Council (PPARC) Postdoctoral Research Fellowships** are independent prize fellowships that allow junior researchers, who have held their Ph.D. for two years or less at the time of appointment, to devote themselves to independent study for a period of up to three years at a chosen UK institution. PPARC makes up to twelve awards annually across astronomy and particle physics.

## SCIENTIFIC ASSOCIATION MEMBERSHIPS

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- 2006-present : Member of the American Astronomical Society (AAS).
- 2005-present : Kavli Institute for Particle Astrophysics and Cosmology.
- 2005-present : Associate, Dark Cosmology Center, Copenhagen.
- 1995-present : Fellow of the Royal Astronomical Society.
- 1993-present : Member of the United Kingdom Institute of Physics (M.Inst.P., C.Phys.).
- 1990-present : Royal College of Science Association.

## GRANT AWARDS AS PRINCIPAL INVESTIGATOR \_\_\_\_\_

This list covers major observatory and other funded grant awards for which I was/am principal investigator (science and/or administrative). The exposure times associated with observatory awards are given conventionally, e.g. in units of kiloseconds for X-ray satellites and orbits for the Hubble Space Telescope. Following Stanford University practice, dollar amounts for the awards are not shown.

### NASA CHANDRA X-RAY OBSERVATORY:

- **Cycle 15 (2013):** ‘Observing cool core disruption in close-up’  
(1 target, 250ks).
- **Cycle 15 (2013):** ‘Nature of gas density fluctuations in the Perseus Cluster: AGN feedback, turbulence and mergers’  
(Archival study).
- **Cycle 14 (2012):** ‘Resolving the nearest cold front in the sky: the cleanest experimental tool to study detailed ICM physics’  
**Large Program (1 target, 500ks).**
- **Cycle 14 (2012):** ‘Probing galaxy formation with fast rotating elliptical galaxies’  
(5 targets, 150ks).
- **Cycle 14 (2012):** ‘Tracing a merger from start to finish in Abell 85’  
(2 targets, 160ks).
- **Cycle 13 (2011):** ‘A Chandra study of the large-scale shock front in Abell 2219’  
(1 target, 150ks).
- **Cycle 13 (2011):** ‘Imaging gas clumping in the outskirts of nearby clusters of galaxies’  
(4 targets, 150ks).
- **Cycle 13 (2011):** ‘Examining incredible structure in the core of the Coma cluster’  
**Large Program (4 targets, 500ks).**
- **Cycle 13 (2011):** ‘Diffusive Shock Acceleration in a Double Radio Relic Cluster’  
(1 target, 200ks).
- **Cycle 12 (2010):** ‘Extreme Mergers from the Massive Cluster Survey’  
(1 target, 130ks).
- **Cycle 12 (2010):** ‘Constraining gravity with the growth of galaxy clusters’  
(theory proposal).
- **Cycle 11 (2009):** ‘Anatomy of a merger: the curious case of MACS J0417.5-1154’  
(1 target, 80ks).
- **Cycle 11 (2009):** ‘Study of the interaction between the puzzling AGN and the hot gas in the cooling core of Sersic 159-03’  
(1 target, 100ks).
- **Cycle 10 (2008):** ‘Bondi accretion and jet power in a complete sample of elliptical galaxies’  
(3 targets, 120ks total).

- **Cycle 10 (2008):** ‘Mapping Dark Matter in the Merging Cluster MACS0025.4-1222’  
(1 target, 115ks).
- **Cycle 9 (2007):** ‘Probing Dark Energy with Relaxed Galaxy Clusters’  
**Large Program (13 targets, 465ks total).**
- **Cycle 9 (2007):** ‘Bubble heating in Extreme Cooling Clusters’  
(1 target, 100ks).
- **Cycle 8 (2006):** ‘The relation between accretion rate and jet power in elliptical galaxies’  
(Archival study).
- **Cycle 8 (2006):** ‘The cluster core of Abell 2204: AGN interaction and cold fronts’  
(1 target, 80ks).
- **Cycle 7 (2005):** ‘Powerful Radio Sources in Galaxy Clusters’  
(1 target, 60ks).
- **Cycle 6 (2004):** ‘Probing dark energy using the X-ray gas mass fraction in relaxed galaxy clusters’  
**Director’s Discretionary Time: (12 targets, 400ks total).**
- **Cycle 5 (2003):** ‘A detailed Chandra study of the luminous lensing cluster MS2137.3-2353’  
(1 target, 100ks).
- **Cycle 5 (2003):** ‘A Chandra Study of the relaxed lensing cluster Abell 2537’  
(1 target, 40ks).
- **Cycle 4 (2002):** ‘Cosmological constraints from the X-ray gas mass fraction in the most luminous relaxed clusters’ (1 target, 120ks).
- **Cycle 4 (2002):** ‘A detailed study of the luminous lensing cluster Abell 2390’  
(1 target, 100ks).
- **Cycle 3 (2001):** ‘Chandra and HST observations of the brightest, relaxed cluster lenses’  
(2 targets, 70ks total).
- **Cycle 2 (2000):** ‘Chandra and HST observations of the brightest cluster lenses’  
(1 target, 10ks).
- **Cycle 1 (1998):** ‘Cluster gravitational lenses and the impact of cooling flows’  
(1 target, 40ks).

#### NASA XMM-NEWTON:

- **Cycle 10 (2010):** ‘The deep impact of AGN feedback in Messier 84’  
(1 target, 130ks total).
- **Cycle 10 (2010):** ‘Beyond the virial radius of the X-ray brightest cluster’  
(1 target, 16ks total).
- **Cycle 9 (2009):** ‘New Cosmological Constraints from X-ray Clusters’  
**Large Program (45 targets, 390ks total).**
- **Cycle 8 (2008):** ‘A First Look at the Merging Cluster Abell 2254 with XMM-Newton’  
(1 target, 60ks total).

- **Cycle 6 (2006):** ‘Constraining Dark Matter with Merging Galaxy Clusters’  
(2 targets, 180ks total).
- **Cycle 5 (2005):** ‘Enrichment and cooling in the Centaurus cluster’  
(1 target, 140ks).
- **Cycle 5 (2005):** ‘Determining the heat balance in groups and clusters’  
(3 targets, 70ks total).
- **Cycle 2 (2002):** ‘XMM-Newton observations of the brightest relaxed cluster lenses’  
(3 targets, 95ks total).
- **Cycle 1 (1999):** ‘Cluster lensing and the impact of cooling flows’  
(1 target, 20ks).

#### NASA HUBBLE SPACE TELESCOPE (HST):

- **Cycle 21 (2013):** ‘Riding the wake of a cluster merger: star formation, filaments and turbulence’  
(1 target, 5 orbits).
- **Cycle 21 (2013):** ‘An XMM-Newton+HST study of the likely most luminous  $z \geq 0.9$  galaxy cluster’  
(1 target, 4 orbits).
- **Cycle 19 (2011):** ‘Dark Interactions: New Constraints on Self Interacting Dark Matter ’  
(Archival study).
- **Cycle 19 (2011):** ‘Extreme Mergers from the Massive Cluster Survey’  
(1 target, 4 orbits).
- **Cycle 18 (2009):** ‘Anatomy of a merger: the curious case of MACS J0417.5-1154’  
(1 target, 4 orbits).
- **Cycle 16 (2007):** ‘Two new ‘bullets’ for MOND: revealing the properties of dark matter in massive merging clusters’ (2 targets, 24 orbits total).
- **Cycle 11 (2002):** ‘Chandra and HST observations of the brightest, relaxed cluster lenses’  
(3 targets, 3 orbits total).
- **Cycle 9 (2000):** ‘Chandra and HST observations of the brightest cluster lenses’  
(1 target, 9 orbits).

#### NASA SUZAKU:

- **Cycle 6 (2011):** ‘To beyond the virial radius of the X-ray brightest cluster’  
Key Project (28 targets, 520ks total).
- **Cycle 5 (2010):** ‘To beyond the virial radius of the X-ray brightest cluster’  
Key Project (14 targets, 260ks total).
- **Cycle 4 (2009):** ‘To beyond the virial radius of the X-ray brightest cluster in the sky’  
(14 targets, 260ks total).



NASA HERSCHEL SPACE OBSERVATORY:

- **Cycle 1 (2010):** ‘Understanding the physics of cold gas in the nearby proxies of distant cooling cores’ (**10 targets, 24 hrs total**).

NASA ASTROPHYSICS DATA ANALYSIS PROGRAM (ADAP):

- **FY2013-2015:** ‘Witnessing the growth of the nearest galaxy cluster’ (12-ADAP12-0115).
- **FY2012-2014:** ‘The Outskirts of Galaxy Clusters’ (11-ADAP11-0030).

NASA EINSTEIN FELLOWSHIPS (AS OFFICIAL SPONSOR):

- **Julie Hlavecek-Larrondo (2012-2015)**, Stanford University.
- **Aurora Simionescu (2009-2012)**, Stanford University.
- **Norbert Werner (2008-2011)**, Stanford University.

AWARDS AS CO-INVESTIGATOR (SINCE 10/99) \_\_\_\_\_

Co-I of programs using Chandra (10+ programs); XMM-Newton (10+ programs); Suzaku; Hubble Space Telescope; Herschel Space Observatory; Spitzer Space Telescope; Ground-based optical telescopes (Subaru, KECK, VLT, CFHT, WHT, UCO, AAT, UH-88inch); Radio observations: (VLA, GMRT).

OBSERVING AWARDS AS JUNIOR RESEARCHER (PRE- 10/99) \_\_\_\_\_

More than 500 ks as PI and 2 Ms as Co-I on the ASCA, ROSAT and RXTE satellites. Seven weeks on international optical facilities, acting as observer 5/7 weeks. Co-I awards on the VLA radio observatory, Hubble Space Telescope and Infrared Space Observatory.

## SELECTED INVITED LECTURES AND REVIEW TALKS

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1. *“Galaxy Cluster Cosmology”*.  
Invited talk at ‘Tracing Cosmic Evolution with Clusters of Galaxies’, international conference, Sesto, Italy. July 2013.
2. *“Galaxy Cluster Cosmology”*.  
Invited talk at ‘Cosmo Probes 2013’, international conference, Lausanne, Switzerland. June 2013.
3. *“Cluster Distance Measurements”*.  
Invited talk at ‘Cosmic Frontier Workshop’, SLAC National Accelerator Laboratory, USA. March 2013.
4. *“Realistic Plans”*.  
Invited talk at ‘DARK OUT’, Lisbon, Portugal. November 2012.
5. *“X-ray Cluster Cosmology”*.  
Invited talk at Japanese Physical Society, Kyoto, Japan. September 2012.
6. *“Cluster Cosmology”*.  
Invited talk at International Astronomical Union XXVIII General Assembly, Beijing, China. August 2012.
7. *“Galaxy Clusters and the Dark Universe”*.  
Colloquium, SLAC National Accelerator Laboratory, USA. November 2011.
8. *“Galaxy Clusters and the Dark Universe”*.  
Colloquium, Herzberg Institute, Victoria, Canada. November 2011.
9. *“Galaxy Clusters and the Dark Universe”*.  
Colloquium, The Ohio State University, USA. October 2011.
10. *“Galaxy Clusters and the Dark Universe”*.  
Invited talk at ‘The Dark Universe’, international conference, University of Heidelberg, Germany. October 2011.
11. *“Dark Energy Constraints from Observations of Galaxy Clusters”*.  
Invited talk at ‘DEUS: Current and Future Challenges of the Dark and Early Universes’, international conference, Niels Bohr Institute, Denmark. August 2011.
12. *“Cosmological Constraints from Observations of Galaxy Clusters”*.  
Two invited lectures at ‘The History of the Universe’, SLAC Summer Institute, SLAC National Accelerator Laboratory, USA. August 2011.
13. *“Cosmological Constraints from the Cluster Baryon Fraction”*.  
Invited talk at ‘Monsters, Inc.: Astrophysics and Cosmology with Galaxy Clusters’, international conference, Kavli Institute for Theoretical Physics, USA. March 2011.
14. *“Cosmology with ASTRO-H”*.  
Invited talk at ASTRO-H conference, Stanford, USA. August 2010.

15. *“Perseus - to the virial radius and beyond”*.  
Invited talk at Suzaku International Merging Committee meeting, Insitute of Space and Astronautical Science, Sagamihara, Japan. February 2010.
16. *“Suzaku observations of the Perseus Cluster - to beyond the virial radius”*.  
Invited talk at ‘Clusters of Galaxies as Cosmic Laboratories’, international conference, Massachusetts Institute of Technology, MA, USA. January 2010.
17. *“New cosmological constraints from X-ray clusters”*.  
Colloquium, Kavli Institute for Cosmological Physics, University of Chicago, IL, USA. October 2009.
18. *“X-ray cluster cosmology”*.  
Invited talk at ‘Recent Advances in Cosmology’, international conference, Potsdam, Germany. September 2009.
19. *“X-ray cluster cosmology”*.  
Invited talk at ‘Perspectives of High Energy Astrophysics’, MPE Symposium, Garching, Germany. July 2009.
20. *“Galaxy Clusters in X-rays: Physics and Cosmology”*.  
Rossi Prize Lecture, 213th American Astronomical Society meeting, Long Beach, CA, USA. January 2009.
21. *“New cosmological constraints from X-ray studies of galaxy clusters”*.  
Colloquium, Department of Astrophysical and Planetary Sciences, University of Colorado at Boulder, CO, USA. November 2008.
22. *“New cosmological constraints from X-ray studies of galaxy clusters”*.  
Colloquium, Department of Physics and Astronomy, San Francisco State University, CA, USA. November 2008.
23. *“X-ray Cluster Cosmology”*.  
Invited talk at ‘Putting Gravity to Work’, international conference, Cambridge University, UK. July 2008.
24. *“New cosmological constraints from X-ray studies of galaxy clusters”*.  
Invited talk at ‘Northeast String Cosmology Meeting’, New York Academy of Sciences, NY, USA. May 2008.
25. *“Cosmological constraints from X-ray clusters”*.  
Invited talk at ‘The Warm and Hot Universe’, international conference, New York, NY, USA. May 2008.
26. *“Probing Dark Energy with X-ray clusters”*.  
Invited talk at ‘A Decade of Dark Energy’, international conference, Space Telescope Science Institute, MD, USA. May 2008.
27. *“New cosmological constraints from X-ray studies of galaxy clusters”*.  
Colloquium, Department of Astronomy, UC Berkeley, CA, USA. April 2008.

28. *“Cosmology with Constellation-X”*.  
Invited talk at Constellation-X Facility Science Team meeting, Boulder, CO, USA. February 2008.
29. *“New cosmological constraints from X-ray studies of galaxy clusters”*.  
Colloquium, Department of Physics, Stanford University, CA, USA. January 2008.
30. *“New cosmological constraints from X-ray studies of galaxy clusters”*.  
Joint MIT/Harvard/Tufts seminar, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA, USA. October 2007.
31. *“Cosmological constraints from X-ray luminous galaxy clusters: the baryonic mass fraction and the growth of cosmic structure”*.  
Invited lecture to the Transregional Collaborative Research Centre 33, Universities of Bonn/Heidelberg/Munich, Germany (given in absentia). September 2007.
32. *“Dark Matter in Clusters”*.  
Invited lecture at the SLAC Summer Institute ‘Dark Matter: from the Cosmos to the Laboratory’, Stanford Linear Accelerator Center, CA, USA. August 2007.
33. *“The relation between accretion rate and jet power in elliptical galaxies”*.  
Invited talk at ‘The Impact of AGN feedback on Galaxy Formation’, international conference, Schloss Ringberg, Germany, May 2007.
34. *“Cosmology with the most luminous X-ray clusters”*.  
Invited talk at ‘Clusters of Galaxies as Cosmological Probes’, international conference, Aspen, CO, USA. February 2007.
35. *“Probing Cosmology with X-ray Clusters”*.  
Invited lecture to the National Academies Beyond Einstein Program Assessment Committee (BEPAC), Newport Beach, CA, USA. January 2007.
36. *“Probing Dark Energy with Constellation-X”*.  
Invited talk at Constellation-X Facility Science Team meeting, Goddard Space Flight Center, Greenbelt, MD, USA. December 2006.
37. *“Cosmological Constraints from X-ray Studies of the Largest Relaxed Galaxy Clusters”*.  
Colloquium, UC Davis, USA. November 2006.
38. *“Cosmological Constraints from X-ray Studies of the Largest Relaxed Galaxy Clusters”*.  
Invited lecture at KITP program ‘Applications of Gravitational Lensing: Unique Insights into Galaxy Formation and Evolution’, Kavli Institute for Theoretical Physics, UC Santa Barbara, USA. October 2006.
39. *“The relation between accretion rate and jet power in X-ray luminous elliptical galaxies”*.  
Invited talk at ‘Heating vs. Cooling in Galaxies and Clusters of Galaxies’, international conference, Garching, Germany. August, 2006.
40. *“Probing Dark Energy with Constellation-X”*.  
Invited talk at Constellation-X Facility Science Team international conference, Boston, MA, USA. February 2006.

41. *“Cosmology with galaxy clusters”*.  
Invited talk at ‘Cosmology 2005: a reality check’, international conference, DSRI, Copenhagen, Denmark. Dec 2005.
42. *“Cosmological constraints from X-ray observations of galaxy clusters”*.  
Colloquium, University of Maryland, USA. April 2005.
43. *“Cosmological constraints from X-ray observations of galaxy clusters”*.  
Colloquium, UC Santa Cruz, USA. April 2005.
44. *“Probing Dark Energy with Constellation-X”*.  
Invited talk at ‘Constellation-X/XEUS Roadmap’, international conference, Boston, USA. February 2005
45. *“Probing Dark Energy with Constellation-X”*.  
Invited talk at ‘Constellation-X Dark Energy Workshop’, Greenbelt, MD, USA. November 2004.
46. *“Probing Dark Energy with Galaxy clusters”*.  
Invited talk at ‘HEAD 2004’, international conference, New Orleans, USA. September 2004.
47. *“Cosmological constraints from X-ray observations of galaxy clusters”*.  
Invited talk at ‘The Quest for a Concordance Cosmology and Beyond’, international conference, Cambridge, UK. July 2004.
48. *“Cosmology with galaxy clusters”*.  
Invited seminar at Institute of Astronomy, Cambridge, UK. June 2004.
49. *“Cosmological constraints from Chandra observations of galaxy clusters”*.  
Colloquium, Stanford University, USA. March 2004.
50. *“Cosmological constraints from the X-ray gas mass fraction in relaxed galaxy clusters”*.  
Invited talk at ‘Dark Energy and Cosmology from X-ray Cluster Surveys’, international conference, Greenbelt, Maryland, USA. January 2004.
51. *“Cosmology with galaxy clusters”*.  
Invited seminar, University of Sussex, UK. October 2003.
52. *“Cosmological constraints from Chandra X-ray observations of galaxy clusters”*.  
Invited talk at ‘Cosmology with Sunyaev-Zeldovich Cluster Surveys’, international conference, Chicago, USA. September 2003.
53. *“Cosmology from Chandra observations of galaxy clusters”*.  
Invited talk at ‘4 Years of Chandra Observations: a Tribute to Riccardo Giacconi’, Chandra Symposium, Huntsville, USA. September 2003.
54. *“Cosmological constraints from X-ray observations of galaxy clusters”*.  
Invited talk at ‘Multiwavelength Cosmology’, international conference, Mykonos, Greece. June 2003.

55. *“The distribution of mass in cluster cores”*.  
Invited talk at ‘The Riddle of Cooling Flows in galaxies and clusters of galaxies’, international conference, University of Virginia, USA. May 2003.
56. *“Cosmological constraints from X-ray and lensing observations of galaxy clusters”*.  
Invited talk at ‘Testing Cosmological Models with Galaxy Clusters’, international conference, Schloss Ringberg, Germany. January 2003.
57. *“Cosmological constraints from Chandra X-ray observations of galaxy clusters”*.  
Colloquium, University of Durham, UK. November 2002.
58. *“Cosmological constraints from Chandra X-ray observations of galaxy clusters”*.  
Colloquium, University of Sussex, UK. November 2002.
59. *“Cosmological constraints from Chandra X-ray observations of galaxy clusters”*.  
Colloquium, University of Edinburgh, UK. November 2002.
60. *“Cosmological constraints from X-ray observations of galaxy clusters”*.  
Invited seminar, Department of Applied Mathematics and Theoretical Physics, Cambridge, UK. October 2002.
61. *“Cosmological constraints from X-ray observations of galaxy clusters”*.  
Invited talk at ‘JENAM 2002: The Unsolved Universe: challenges for the future’, international conference, Porto, Portugal. September 2002.
62. *“Cluster mass measurements and cosmology”*.  
Invited talk at ‘Mapping Mass in the Universe’, conference, University of Birmingham, UK. August 2002.
63. *“Cosmological constraints from the X-ray gas mass fraction in high- $z$  clusters”*.  
Invited talk at ‘Distant Galaxy Clusters’, international conference, DSRI, Copenhagen, Denmark. May 2002.
64. *“Chandra observations of relaxed galaxy clusters”*.  
Invited talk at ‘Matter and Energy in Clusters of Galaxies’, international conference, National Central University, Chung-Li, Taiwan. April 2002.
65. *“Cosmological constraints from Chandra observations of galaxy clusters”*.  
Invited talk at National Astronomy Meeting, University of Bristol, UK. April, 2002.
66. *“Cosmological constraints from Chandra observations of galaxy clusters”*.  
Invited talk at ‘X-ray Astronomy in the New Millennium’, Royal Society Discussion Meeting, London, UK. February, 2002.
67. *“The X-ray virial relations for relaxed lensing clusters observed with Chandra”*.  
Invited talk at ‘Tracing Cosmic Evolution with Galaxy Clusters’, international conference, Sesto, Italy. June 2001.
68. *“Chandra observations of galaxy clusters”*.  
Colloquium, Institute of Astronomy, Cambridge, UK. May 2001.

69. *“Mass measurements and cosmology with luminous lensing clusters”*.  
Invited talk at ‘Galaxy Clusters and the High Redshift Universe observed in X-rays’, international conference, Les Arcs, France. March 2001.
70. *“Chandra measurements of the masses of luminous lensing clusters”*.  
Invited talk at ‘First Science Results from the XMM/Newton and Chandra X-ray Observatories’, international conference, London, UK. February 2001.
71. *“Chandra observations of luminous lensing clusters”*.  
Invited talk at ‘Head 2000’, international conference, Hawaii, USA. November 2000.
72. *“The distribution of mass in the luminous lensing cluster Abell 2390”*.  
Invited talk at ‘Constructing the Universe with Clusters of Galaxies’, international conference, Paris, France. July 2000.
73. *“Chandra observations of galaxy clusters”*  
Colloquium, Harvard-Smithsonian Center for Astrophysics, MA. USA. Dec 1999.
74. *“X-ray Observations of Nearby Cluster Cooling Flows”*  
Invited review at ‘Large Scale Structure in the X-ray Universe’, international conference, Santorini, Greece. September 1999.
75. *“The Impact of Cooling Flows in Clusters of Galaxies”*  
Invited review at ‘Highly Energetic Physical Processes and Mechanisms for Emission from Astrophysical Plasmas’, international conference, University of Montana, USA. July 1999.
76. *“The Impact of Cooling Flows on Cluster Properties”*  
Invited review at ‘Diffuse thermal and relativistic plasma in galaxy clusters’, international conference, Garching, Germany. April 1999.

## PRESS RELEASES

1. “Suzaku Shows Clearest Picture Yet of Perseus Galaxy Cluster” (NASA).  
*Simionescu A., Allen S.W., Mantz A.B., et al.*, 24 Mar 2011.
2. “Galactic Super-volcano in Action” (NASA).  
*Werner N., Simionescu A., Million E.T., Allen S.W. et al.*, 18 Aug 2010.
3. “Einstein’s Theory Fights off Challengers” (NASA).  
*Rapetti D., Mantz A.B., Schmidt F., Allen S.W., Hu W., Vikhlinin A.*, 10 Apr 2010.
4. “A Clash of Clusters Provides New Clue to Dark Matter” (NASA).  
Bradac, M., **Allen S.W.** et al., 27 Aug 2008.
5. “NASA’s Chandra Finds Black Holes Are ‘Green’ ” (NASA Space Science Update).  
**Allen S.W.**, Reynolds C.S. NASA media teleconference, 24 Apr 2006.
6. “Hot Studies of Dark Energy” (NASA Space Science Update).  
**Allen S.W.**, Fabian A.C. Televised press conference at NASA HQ, Washington DC, USA, 18 May 2004.
7. “Chandra ‘Hears’ a Black Hole” (NASA Space Science Update).  
Fabian A.C., **Allen, S.W.** Televised press conference at NASA HQ, Washington DC, USA, 9 September 2003.
8. “Astronomers Take the Measure of Dark Matter in the Universe” (NASA).  
**Allen, S.W.** Held in Washington DC, USA, 5 September 2001.
9. “A Cooling Flow in the Galaxy Cluster Abell 1795” (NASA image release).  
Fabian A.C., Sanders J.S., Ettori S., Taylor G.B., **Allen S.W.** et al., 4 Dec 2000.
10. “Chandra Catches Cannibal Galaxy in the Act” (NASA).  
Fabian A.C., Sanders J.S., Ettori S., Taylor G.B., **Allen S.W.** et al., Held in Huntsville, AL, USA, 7 June 2000.
11. “Astronomers Detect Activity From Quiet Supermassive Black Holes” (NASA).  
Di Matteo, T., **Allen, S.W.** Held in Charleston, SC, USA, 13 April 1999.

The work behind the press release “NASA’s Chandra Finds Black Holes Are ‘Green’” issued in April 2006 (see refereed publication [69] in attached list) was listed as one of four highlights for the Physical Sciences in the 2006 Stanford Annual Report.

For more details on these press releases, including selected links to media websites, see <http://www.stanford.edu/group/xoc/press.html>



## PUBLICATIONS IN REFEREED JOURNALS

This list summarizes (in chronological order) my publications in leading, peer-reviewed astrophysics journals. Citation counts, as detailed on the NASA Astrophysics Data System (ADS) as of 09/11/2013, are given in parentheses. These citation counts are incomplete. Other articles published in books, unrefereed journals and conference proceedings can be found separately at <http://www.stanford.edu/group/xoc/swa/publications.html>.

### NOTE REGARDING AUTHOR LISTS

In most fields of astrophysics, including those relevant here, the individual making the most significant contribution to a paper is listed first; the next most significant contributor is listed second, and so on. For long author lists, beyond the first few authors and where relative contributions become difficult to gauge, alphabetical order is occasionally employed.

### NOTE REGARDING MENTORED GRADUATE STUDENTS AND POSTDOCS

The names of graduate students and postdoctoral scholars for whom I was supervisor at the time the work was written are listed in *italic* font.

### JOURNAL ABBREVIATIONS

MNRAS: *Monthly Notices of the Royal Astronomical Society*

ApJ: *Astrophysical Journal*

ApJL: *Astrophysical Journal Letters*

Where page numbers are preceded by an ‘L’ (for ‘letters’), this indicates that the publication was included in the section of the main journal appropriate for short, urgent publications.

**PUBLICATION STATISTICS:** 113 published, peer-reviewed papers  
(> 10000 citations,  $h = 58$ , lead-author  $h = 27$ ).

1. “GINGA and EXOSAT Observations of the Perseus Cluster of Galaxies”.  
**Allen S.W.**, Fabian A.C., Johnstone R.M., Nulsen P.E.J., Edge A.C. 1992, MNRAS, 254, 51-59.
2. “3C109: An obscured X-ray Luminous quasar?”.  
**Allen S.W.**, Fabian A.C. 1992, MNRAS, 258, L29-L32.
3. “Optical spectroscopy of the ROSAT X-ray Brightest Clusters”.  
**Allen S.W.**, Edge A.C., Fabian A.C., Böhringer H., Crawford C.S., Ebeling H., Johnstone R.M., Naylor T., Schwarz R.A. 1992, MNRAS, 259, 67-81.
4. “A ROSAT PSPC observation of Abell 478. The distribution of X-ray absorbing matter in a massive cooling flow”.  
**Allen S.W.**, Fabian A.C., Johnstone R.M., White D.A., Daines S.J., Edge A.C., Stewart G.C., 1993, MNRAS, 262, 901-914.
5. “A ROSAT PSPC investigation of the Centaurus cluster of galaxies”.  
**Allen S.W.**, Fabian A.C., 1994, MNRAS, 269, 409-426.

6. "A ROSAT HRI observation of the Abell 478 cluster of galaxies".  
White D.A., Fabian A.C., **Allen S.W.**, Edge A.C., Crawford C.S., Johnstone R.M., Stewart G.C., Voges W., 1994. MNRAS, 269, 589-606.
7. "Zwicky 3146 - The most massive cooling flow?".  
Edge A.C., Fabian A.C., **Allen S.W.**, Crawford C.S., White D.A., Böhringer H., Voges W., 1994, MNRAS, 270, L1-L6.
8. "Optical spectroscopy of the ROSAT X-ray Brightest Clusters - II".  
Crawford C.S., Edge A.C., Fabian A.C., **Allen S.W.**, Böhringer H., Ebeling H., Johnstone R.M., 1995, MNRAS, 274, 75-84.
9. "Cooling flows, central galaxy-cluster alignments, X-ray absorption and dust".  
**Allen S.W.**, Fabian A.C., Edge A.C., Böhringer H., White D.A., 1995, MNRAS, 275, 741-754.
10. "Starbursts in cooling flows: blue continua and emission-line nebulae in central cluster galaxies".  
**Allen S.W.**, 1995, MNRAS, 276, 947-960.
11. "A combined X-ray and gravitational lensing study of the massive cooling-flow cluster PKS0745-191".  
**Allen S.W.**, Fabian A.C., Kneib J.-P., 1996, MNRAS, 279, 615-635.
12. "ASCA and ROSAT observations of distant massive cooling flows".  
**Allen S.W.**, Fabian A.C., Edge A.C., Bautz M.W., Furuzawa A., Tawara Y., 1996, MNRAS, 283, 263-281.
13. "The ROSAT Brightest Cluster Sample (BCS): The Cluster X-ray luminosity function within  $z = 0.3$ ".  
Ebeling H., Edge A.C., Fabian A.C., **Allen S.W.**, Crawford C.S., Böhringer H., 1997, ApJL, 479, 101-105.
14. "The spatial distributions of cool gas and intrinsic X-ray absorbing material in cooling flows".  
**Allen S.W.**, Fabian A.C., 1997, MNRAS, 286, 583-603.
15. "The ASCA X-ray spectrum of the powerful radio galaxy 3C109".  
**Allen S.W.**, Fabian A.C., Idesawa E., Inoue H., Kii T., Otani C., 1997, MNRAS, 286, 765-770.
16. "Resolving the discrepancy between X-ray and gravitational lensing mass measurements for clusters of galaxies".  
**Allen S.W.**, 1998, MNRAS, 296, 392-406.
17. "The impact of cooling flows on the  $L_x/T_x$  relation for the most luminous clusters".  
**Allen S.W.**, Fabian A.C., 1998, MNRAS, 297, L57-L62.
18. "The relationship between cooling flows and metallicity measurements for X-ray luminous clusters".  
**Allen S.W.**, Fabian A.C., 1998, MNRAS, 297, L63-L68.

19. "A ROSAT study of the cores of clusters of galaxies -I. Cooling flows in an X-ray flux-limited sample".  
Peres C.B., Fabian A.C., Edge A.C., **Allen S.W.**, Johnstone R.M., White D.A., 1998, MNRAS, 298, 416-432.
20. "The ROSAT Brightest Cluster Sample (BCS) -I. The compilation of the sample and the cluster logN-log S distribution".  
Ebeling H., Edge A.C., Böhringer H., **Allen S.W.**, Crawford C.S., Fabian A.C., Voges W., Huchra J.P., 1998, MNRAS, 301, 881-914.
21. "X-ray and lensing results on the cluster around the powerful radio galaxy 4C+55.16".  
Iwasawa, K., **Allen, S.W.**, Fabian, A.C., Edge A.C., Ettori S., 1999, MNRAS, 306, 467-472.
22. "The ROSAT Brightest Cluster Sample - III: Optical spectra of the central cluster galaxies".  
Crawford C.S., **Allen S.W.**, Ebeling H., Edge A.C., Fabian A.C., 1999, MNRAS, 306, 857-896.
23. "Hard X-ray emission from elliptical galaxies and its contribution to the X-ray background".  
Di Matteo T., **Allen S.W.**, 1999, ApJL, 527, L21-L24.
24. "Hard X-ray emission from elliptical galaxies".  
**Allen S.W.**, Di Matteo T., Fabian A.C., 2000, MNRAS, 311, 493-506.
25. "Low-radiative-efficiency accretion in the nuclei of elliptical galaxies".  
Di Matteo T., Quataert E., **Allen S.W.**, Narayan R., Fabian A.C., 2000, MNRAS, 311, 507-521.
26. "The properties of cooling flows in X-ray luminous clusters of galaxies".  
**Allen S.W.**, 2000, MNRAS, 315, 269-295.
27. "Testing the connection between the X-ray and submillimetre source populations using Chandra".  
Fabian A.C., Smail I.R., Iwasawa K., **Allen S.W.**, Blain A.W., Crawford C.S., Ettori S., Ivison R.J., Johnstone R.M., Kneib J.-P., Wilman R.J., 2000, MNRAS, 315L, L8-L12.
28. "A determination of the Hubble constant using measurements of X-ray emission and the Sunyaev-Zeldovich effect at millimeter wavelengths in the cluster Abell 1835".  
Mauskopf P.D., Ade P.A.R., Allen S.W., Church S.E., Edge A.C., Ganga K.M., Holzappel W.L., Lange A.E., Rownd B.K., Philhour B.J., Runyan M.C, 2000, ApJ, 538, 505-516.
29. "The ROSAT Brightest Cluster Sample - IV. The extended sample".  
Ebeling H., Edge A.C., **Allen S.W.**, Crawford C.S., Fabian A.C., Huchra J.P., 2000, MNRAS, 318, 333-340.
30. "X-ray colour maps of the cores of galaxy clusters".  
Sanders J.S., Fabian A.C., **Allen S.W.**, 2000, MNRAS, 318, 733-746.
31. "Chandra imaging of the complex X-ray core of the Perseus cluster".  
Fabian A.C., Sanders J.S., Ettori S., Taylor G.B., **Allen S.W.**, Crawford C.S., Iwasawa K., Johnstone R.M., Ogle P.M., 2000, MNRAS, 318L, L65-L68.

32. "Chandra imaging of the X-ray core of Abell 1795".  
Fabian A.C., Sanders J.S., Ettori S., Taylor G.B., **Allen S.W.**, Crawford C.S., Iwasawa K., Johnstone R.M., 2001, MNRAS, 321, L33-L36.
33. "Accretion onto nearby supermassive black holes: Chandra constraints on the dominant cluster galaxy NGC 6166".  
Di Matteo T., Johnstone R.M., **Allen S.W.**, Fabian A.C., 2001, ApJL, 550, L19-L23.
34. "BeppoSAX observations of three distant, highly luminous clusters of galaxies: RXJ1347-1145, Zwicky 3146 and Abell 2390".  
Ettori S., **Allen S.W.**, Fabian A.C., 2001. MNRAS, 322, 187-194.
35. "ASCA and ROSAT observations of nearby cluster cooling flows".  
**Allen S.W.**, Fabian A.C., Johnstone R.M., Arnaud K.A., Nulsen P.E.J., 2001, MNRAS, 322, 589-613.
36. "Chandra X-ray observations of the 3C295 cluster core".  
**Allen S.W.**, Taylor G.B., Nulsen P.E.J., Johnstone R.M., David L.P., Ettori S., Fabian A.C., Forman W., Jones C., McNamara B., 2001, MNRAS, 324, 842-858.
37. "Chandra measurements of the distribution of mass in the luminous lensing cluster Abell 2390".  
**Allen S.W.**, Ettori S., Fabian A.C., 2001. MNRAS, 324, 877-890.
38. "Magnetic fields in the 3C219 cluster".  
Taylor G.B., Govoni F., **Allen S.W.**, Fabian A.C., 2001. MNRAS, 326, 2-15.
39. "Chandra observations of the galaxy cluster Abell 1835".  
*Schmidt R.W.*, **Allen S.W.**, Fabian A.C., 2001. MNRAS, 327, 1057-1070.
40. "The intracluster iron distribution around 4C+55.16".  
Iwasawa K., Fabian A.C., **Allen S.W.**, Ettori S., 2001, MNRAS, 328, L5-L9.
41. "The X-ray virial relations for relaxed lensing clusters observed with Chandra".  
**Allen S.W.**, *Schmidt R.W.*, Fabian A.C., 2001. MNRAS, 328, L37-L42.
42. "Deep inside the core of Abell 1795: the Chandra view".  
Ettori S., Fabian A.C., **Allen S.W.**, Johnstone R.M., 2002, MNRAS, 331, 635-648.
43. "The missing soft X-ray luminosity in cluster cooling flows".  
Fabian A.C., **Allen S.W.**, Crawford, C.S., Johnstone R.M., Morris R.G., Sanders J.S., *Schmidt R.W.*, 2002, MNRAS, 332, L50-L54.
44. "Magnetic fields in the Centaurus Cluster".  
Taylor G.B., Fabian A.C., **Allen S.W.**, 2002, MNRAS, 334, 769-776.
45. "Cosmological constraints from the X-ray gas mass fraction in relaxed lensing clusters observed with Chandra".  
**Allen S.W.**, *Schmidt R.W.*, Fabian A.C., 2002, MNRAS, 334, L11-L15.

46. “Chandra observations of RXJ1347.5-1145: the distribution of mass in the most X-ray-luminous galaxy cluster known”.  
**Allen S.W.**, *Schmidt R.W.*, Fabian A.C., 2002, MNRAS, 335, 256-266.
47. “Conduction and cooling flows”.  
Voigt L.M., *Schmidt R.W.*, Fabian A.C., **Allen S.W.**, Johnstone R.M., 2002, MNRAS, 335, L7-L11.
48. “Chandra observations of Abell 2199”.  
Johnstone R.M., **Allen S.W.**, Fabian A.C., Sanders J.S., 2002, MNRAS, 336, 299-308.
49. “A survey of molecular hydrogen in the central galaxies of cooling flows”.  
Edge A.C., Wilman R.J., Johnstone R.M., Crawford C.S., Fabian A.C., **Allen S.W.**, 2002, MNRAS, 337, 49-62.
50. “Exciting molecular hydrogen in the central galaxies of cooling flows”.  
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51. “The peculiar cooling flow cluster RX J0820.9+0752”.  
Bayer-Kim C.M., Crawford C.S., **Allen S.W.**, Edge A.C., Fabian A.C., 2002, MNRAS, 337, 938-952.
52. “Accretion onto the Supermassive Black Hole in M87”.  
Di Matteo T., **Allen S.W.**, Fabian A.C., Wilson A., Young A., 2003, ApJ, 582, 133-140.
53. “Chandra observations of the galaxy cluster A478: the interaction of hot gas and radio plasma in the core, and an improved determination of the Compton  $\gamma$ -parameter”.  
Sun M., Jones C., Murray S.S., **Allen S.W.**, Fabian A.C., Edge A.C., 2003, ApJ, 587, 619-624.
54. “Cosmological constraints from the local X-ray luminosity function of the most X-ray luminous galaxy clusters”.  
**Allen S.W.**, *Schmidt R.W.*, Fabian A.C., Ebeling H., 2003, MNRAS, 342, 287-298.
55. “A deep Chandra observation of the Perseus cluster: shocks and ripples”.  
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56. “A unique small-scale gravitational arc in Abell 1201”.  
Edge A.C., Smith G.P., Sand D.J., Treu T., Ebeling H., **Allen S.W.**, van Dokkum P.G., 2003, ApJ, 599, L69-L72.
57. “A preference for a non-zero neutrino mass from cosmological data”.  
**Allen S.W.**, *Schmidt R.W.*, Bridle S.L., 2003, MNRAS, 346, 593-600.
58. “Mapping small-scale temperature and abundance structures in the core of the Perseus cluster”.  
Sanders J.S., Fabian A.C., **Allen S.W.**, *Schmidt R.W.*, 2003, MNRAS, 349, 952-972.
59. “An improved approach to measuring  $H_0$  from X-ray and SZ observations of galaxy clusters”.  
*Schmidt R.W.*, **Allen S.W.**, Fabian A.C., 2004, MNRAS, 352, 1413-1420.

60. "Constraints on Dark Energy from Chandra observations of the largest relaxed galaxy clusters".  
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61. "VLA Polarimetry Observations of PKS 2322–123; Estimating Magnetic Fields in the Abell 2597 Cluster".  
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62. "The Prevalence of Cooling Cores in Clusters of Galaxies at  $z$  0.15-0.4".  
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63. "Constraining Dark Energy with X-ray Galaxy Clusters, Supernovae and the Cosmic Microwave Background".  
*Rapetti D.A.*, **Allen S.W.**, Weller J., 2005, MNRAS, 360, 555-564.
64. "A deep Chandra observation of the Centaurus cluster: bubbles, filaments and edges".  
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65. "The low-power nucleus of PKS 1246-410 in the Centaurus cluster".  
Taylor G.B., Sanders J.S., Fabian A.C., **Allen S.W.**, 2006, MNRAS, 365, 705-711.
66. "A very deep Chandra observation of the Perseus cluster: shocks, ripples and conduction".  
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67. "Magnetic fields in the center of the Perseus Cluster".  
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68. "Fe emission and ionized excess absorption in the luminous quasar 3C 109 with XMM-Newton".  
Miniutti G., Ballantyne D.R., **Allen S.W.**, Fabian A.C., Ross R.R., 2006, MNRAS, 371, 283-292.
69. "The relation between accretion rate and jet power in X-ray luminous elliptical galaxies".  
**Allen S.W.**, Dunn R.J.H., Fabian A.C., Taylor G.B., Reynolds C.S., 2006, MNRAS, 372, 21-30.
70. "A kinematical approach to dark energy studies".  
*Rapetti D.A.*, **Allen S.W.**, Amin M.A., Blandford R.D., 2007, MNRAS, 375, 1510-1520.
71. "Monitoring the Bi-Directional Relativistic Jets of the Radio Galaxy 3C 338".  
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72. "The dark matter halos of massive, relaxed galaxy clusters observed with Chandra".  
Schmidt R.W., **Allen S.W.**, 2007, MNRAS, 379, 209-221.

73. "Fields and filaments in the core of the Centaurus Cluster".  
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74. "Improved constraints on dark energy from Chandra observations of the largest relaxed galaxy clusters".  
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75. "Active galactic nuclei induced cavities in NGC1399 and NGC4649".  
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78. "New constraints on dark energy from the observed growth of massive X-ray galaxy clusters".  
*Mantz A.*, **Allen S.W.**, Ebeling H., *Rapetti D.A.*, 2008, MNRAS, 387, 1179-1192.
79. "The prospects for constraining dark energy with future X-ray cluster gas mass fraction measurements".  
*Rapetti D.A.*, **Allen S.W.**, *Mantz A.*, 2008, MNRAS, 388, 1265-1278.
80. "Revealing the properties of dark matter in the merging cluster MACSJ0025.4-1222".  
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81. "Revealing the magnetic field in a distant galaxy cluster: discovery of the complex radio emission from MACS J0717.5 +3745".  
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82. "Constraints on turbulent pressure in the X-ray halos of giant elliptical galaxies from resonant scattering".  
*Werner, N.*, Zhuravleva I., Churazov E., Simionescu A., **Allen S.W.**, Forman W., Jones C., Kaastra J. S., 2009, MNRAS, 398, 23-32.
83. "Chandra measurements of non-thermal-like X-ray emission from massive, merging, radio-halo clusters".  
*Million E.T.*, **Allen S.W.**, 2009, MNRAS, 399, 1307-1327.
84. "Constraints on modified gravity from the observed X-ray luminosity function of galaxy clusters".  
*Rapetti D.A.*, **Allen S.W.**, *Mantz A.B.*, Ebeling H., 2009, MNRAS, 400, 699-704.

85. “The radio properties of a complete X-ray selected sample of nearby, massive elliptical galaxies”.  
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86. “Herschel observations of FIR emission lines in brightest cluster galaxies”.  
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88. “Ram pressure stripping of the cool core of the Ophiuchus Cluster”.  
*Million E.T.*, **Allen S.W.**, *Werner, N.*, Taylor G.B., 2010, MNRAS, 405, 1624-1633.
89. “The ASTRO-H mission”.  
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90. “The Observed Growth of Massive Galaxy Clusters I: Statistical Methods and Cosmological Constraints”.  
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