

Paul J. Green

Curriculum Vitae

Harvard-Smithsonian Center for Astrophysics
MS-4, 60 Garden St., Cambridge, MA 02138
Office Phone: 617-495-7057 Cell Phone: 617-721-4355
pgreen@cfa.harvard.edu

EDUCATION

Ph.D. in Physics, 1992,
University of Washington, Seattle
Thesis: *Faint High Latitude Carbon Stars*, Advisor: Bruce Margon
M.S. in Physics, 1989,
University of Washington, Seattle, WA
B.A. in Physics, 1981,
Oberlin College, Oberlin, OH

RESEARCH & EMPLOYMENT

Astrophysicist, Chandra Director's Office,
Einstein Fellowship Project Scientist, June 2013 - present
Smithsonian Astrophysical Observatory, June 2003 - present
Astrophysicist, Chandra Mission Planning,
Smithsonian Astrophysical Observatory, 1996 – May 2003
Hubble Postdoctoral Fellow
Harvard-Smithsonian Center for Astrophysics, 1993 – 1995
NSF-NATO Postdoctoral Fellow in Science and Engineering,
IoA Cambridge, UK and MPE, Garching, Germany, 1992
Research Assistant
University of Washington, Astronomy, 1987 – 1992
Teaching Assistant
University of Washington, Astronomy, 1986 – 1987
University of Washington, Physics, 1984 – 1986
High School Physics Teacher
Peace Corps, Kpagouda, TOGO, W. Africa, 1982 – 1984

BIBLIOGRAPHY

123 [Refereed publications](#) (28 first author), listed as a public ADS library

201 [Non-refereed publications](#), listed as a public ADS library

Refereed publications in last 5 years (links to PDFs hosted at CfA):

[The Sloan Digital Sky Survey Reverberation Mapping Project: the XMM-Newton X-Ray Source Catalog and Multiband Counterparts](#), Teng Liu, Andrea Merloni, Torben Simm, Paul J. Green et al. 2020, ApJS, 250, 32

[Classifying Single Stars and Spectroscopic Binaries Using Optical Stellar Templates](#), Benjamin R. Roulston, Paul J Green and Aurora Y. Kesseli, 2020, ApJS, 249, 34

[The Sloan Digital Sky Survey Reverberation Mapping Project: MgII Lag Results from Four Years of Monitoring](#), Yasaman Homayouni, et al., 2020, ApJ, 901, 55

[A Chandra Study: Are Dwarf Carbon Stars Spun Up and Rejuvenated by Transfer?](#), Paul J. Green, Rodolfo Montez, Fernando Mazzoni, Scott F. Anderson, Orsola De Marco, Jeremy J. Drake, Jay Farihi, Adam Frank, Joel H. Kastner, Brent Miszalski, Benjamin R. Roulston 2019, ApJ, 881, 49

[The Analogous Structure of Accretion Flows in Supermassive and Stellar Mass Black Holes](#), John J. Ruan, Scott F. Anderson, Michael Eracleous, Paul J. Green, Daryl Haggard, Chelsea L. MacLeod, Jessie C. Runnoe, Malgosia Sobolewska 2019, ApJ, 883, 76

[The Time-Domain Spectroscopic Survey: Radial Velocity Variability in Dwarf Carbon Stars](#), Benjamin R. Roulston, Paul J. Green, John J. Ruan, Chelsea L. MacLeod, Scott F. Anderson, Carles Badenes, Joel R. Brownstein, Donald P. Schneider, Keivan G. Stassun 2019, ApJ, 877, 44

[Changing-look Quasar Candidates: First Results from Follow-up Spectroscopy of Highly Optically Variable Quasars](#), Chelsea L. MacLeod, Paul J. Green, Scott F. Anderson, Alastair Bruce, Michael Eracleous, Matthew Graham, David Homan, Andy Lawrence, Amy LeBleu & Nicholas P. Ross 2019, ApJ, 874, 8

[Dwarf carbon stars are likely metal-poor binaries and unlikely hosts to carbon planets](#), Lewis Whitehouse, Jay Farihi, Paul J. Green, Thomas Wilson, & John P. Subasavage 2018, MNRAS, 479, 3873

[The Time-domain Spectroscopic Survey: Target Selection for Repeat Spectroscopy](#), Chelsea MacLeod, Paul J. Green et al. 2018, AJ, 155, 6

[Detection of Time Lags between Quasar Continuum Emission Bands Based On Pan-STARRS Light Curves](#) , Yan-Fei Jiang, Paul J. Green et al., 2017, ApJ, 836, 186

[Now You See It, Now You Don't: The Disappearing Central Engine of the Quasar J1011+5442](#), Jessie Runnoe et al. 2016, MNRAS, 455, 1691

[Towards an Understanding of Changing-Look Quasars With a Statistical Sample: An Archival Spectroscopic Search in SDSS](#) J. Ruan, et al. 2016, ApJ, 826, 188

[The Time-Domain Spectroscopic Survey: Understanding the Optically Variable Sky with SEQUELS in SDSS-III](#) J. Ruan, et al. 2016, ApJ, 825, 137

CITATION METRICS

7588 paper cite my 123 refereed publications to date

Median refereed citations is 31

Hirsch-index is 49

HONORS and AWARDS

SAO Individual Performance-Based Cash Award: 2006, 2010-2019

NASA Group Achievement Award 2005, with Chandra Director's Office Team

NASA Group Achievement Award 2003, with Chandra Mission Planning Team

SAO Special Act/Superior Accomplishment Cash Award for development of AGASC Star Catalog May, 2003

SI Special Achievement Award, August 2003

SAO Special Act Cash Award for outstanding support of Chandra Observatory

- Mission Planning 2000

- during orbital activation 1998

Hughes/Griffith Observatory Science Writing Award, 1993

Henderson Prize for Outstanding Ph.D. Thesis, 1993

PROFESSIONAL SOCIETIES

American Astronomical Society

American Association For The Advancement Of Science

MENTORSHIP and SUPERVISORY ACTIVITIES

Postdoctoral Supervisor for

Chelsea MacLeod, 2016 – 2019
Eric Morganson, 2013 – 2015
Markos Trichas, 2010 – 2012
Anca Constantin, 2007 – 2010
Wayne Barkhouse, 2003 – 2005
Karl Forster, 2000 - 2003

Ph.D. Thesis science advisor for

Ben Roulston (BU), 2019 -
Caroline Scott (Imperial), 2011–2014
John Silverman (UVa), 2001–2004
Daryl Haggard (UWa), 2005–2010

Member SAO Predoctoral Research Committee for

Ben Roulston, 2019 -
Estelle Jeanne Pons, 2014-2015 (Chaired)
Caroline Scott, 2011–2014 (Chaired)
Dae-Won Kim, 2010 – 2011 (Chaired)
Monica Young, 2007 – 2010 (Chaired)
Minsun Kim, 2004 – 2007
Malgosia Sobolewska, 2003
Joanna Kuraskiewicz, 1996 – 2000 (Chaired)

Undergraduate Project Advisor, REU Summer Intern Program

Sierra Dodd, UWa, 2018
Rachel Christina Amaro, UIUC, 2016
Virginia Cunningham, UWVa, 20
Elizabeth Otto, OSU, 2010
Angie Wolfgang, Cornell, 2008
Daniel Perley, Cornell, 2003
Dan Wik, U.Va, 2002
Lisa Falkson, Stanford, 1994

GRANTS and CONTRACTS

Only successful grants awarded as Principal Investigator are shown.

Total to date: \$3.3M. Last 5 years: \$713k

<5 years ago

X-rays from a Unique Spun-up Post Mass Transfer Main Sequence Carbon Star

P.I., Chandra Cycle 22 GO Program, awarded Sep 2020, \$61k

Rejuvenation of the Innocent Bystander: Spin-Up in the Nearest Dwarf Stars

P.I., Chandra Cycle 21 GO Program, awarded Jan 2020, \$94.1k

Changing-Look Quasars: Radical Changes in Accretion Rate?

P.I., Chandra Cycle 21 ToO Program, awarded Feb 2020, \$95.7k

P.I., Chandra Cycle 20 ToO Program, awarded May 2019, \$95.7k

P.I., Chandra Cycle 19 ToO Program, awarded Feb 2019, \$110.9k

Collaborative Research: Accretion Revelations from Changing-Look Quasars

P.I., NSF Collaborative Grant, awarded Sep 2017, \$255.5k

Federal Funds for SDSS-IV In-Kind Work on the TDSS

P.I., funds redirected from SAO as compensation for contributions to the SDSS-IV TDSS variability survey, awarded Mar 2015, \$80k

AGN Selection and the Interplay of X-ray Properties and Variability

P.I., Chandra Cycle 15 Archival Proposal, awarded Jan 2014, \$88k

Rejuvenation of the Innocent Bystander: Testing Spin-Up in Dwarf Carbon Stars

P.I., Chandra Cycle 15/16 Observing Proposals, awarded Dec 2012/2013, \$90.4k

>5 years ago

Characterizing the Variable Sky at SAO

P.I., Smithsonian Competitive "Pell" Grants Program for Science (CGPS) Proposal, awarded Jan 2013, \$80k

The Interplay of Stellar Formation and Accretion in the Local Universe

P.I., Chandra Cycle 12 Archival Proposal, awarded Dec 2011, \$59k

Galaxy Environments vs. X-ray Activity in the ChaMP/SDSS

P.I., Chandra Cycle 11 Archival Proposal, awarded Dec 2009, \$80k

Two to Tango? Binary Quasars, their Environments, and the Merger Hypothesis

P.I., Chandra Cycle 10 Observing Proposal, awarded Dec 2008, \$62.2k

How the ChaMP Stacks up: 17 Years of Chandra time on SDSS Galaxies

P.I., Chandra Cycle 10 Archival Proposal, awarded Dec 2008, \$109.9k

AGN and Galaxies from the ChaMP

P.I., Chandra Cycle 8 Archival Proposal, awarded Dec 2006, \$118.65k

The History of Supermassive Black Hole Accretion from the ChaMP

P.I., Chandra Cycle 7 Archival Proposal, awarded Sept 2005, \$153k

X-ray Quasars, Buried AGN, and Clusters from the ChaMP,

P.I., Chandra Cycle 5 Archival Proposal, awarded Sept 2003, \$240k

The Chandra Multiwavelength Project: A Serendipitous Survey with Chandra Archival Data

P.I., Chandra Cycle 4 Archival Proposal, awarded Sept 2002, \$240k

CHAMP: A Serendipitous X-ray Survey with Chandra Archival Data

P.I., Chandra Cycle 3 Archival Proposal, awarded Sept 2002, \$213.4k

Orientation vs. Evolution from a Unique BALQSO

P.I., Chandra Cycle 3 Observing Proposal, awarded Sept 2001, \$64.3k

Lifting the Shroud Around Broad Absorption Line QSOs

P.I., AXAF Observing Proposal, awarded Sept 1998, \$54.5k

AXAF Digital Archive: An Image Analysis Investigation for Middle and High School Students

P.I., NASA ADP E/PO, awarded Oct 1998, \$3.9k

Wide Separation Quasars: Pairs or Lenses?

P.I., AXAF Observing Proposal, awarded Sept 1998, \$45.9k

Deep ASCA Campaign To Probe One Typical Broad Absorption Line QSO

P.I., ASCA Observing Proposal, awarded via ADP, Sept 1998, \$41.4k

Unveiling the Engines in QSOs: A Multiwavelength Study

P.I., NASA Long Term Space Astrophysics, NAG5-6410, awarded May 1997, \$460k

PG 1416–129: The Only X-ray Bright BAL QSO, or the Missing Link?

P.I., Hubble Space Telescope Observing Proposal, awarded June 1996, \$15k

Broad Absorption Line QSOs: Seeing Past The Disguise

P.I., X-ray Timing Explorer, awarded September 1996, \$19k

From X-ray AGN to Carbon Stars (Hubble Fellowship)

P.I., Space Telescope Science Institute, awarded Dec 1992, \$190k

The Companions of Dwarf Carbon Stars

P.I., Hubble Space Telescope, awarded Dec 1992, \$47k

Long and Medium Term Research: Astrophysics Research at Cambridge

P.I., National Science Foundation INT-9201412, awarded June 1992, \$14k

An X-ray Baldwin Effect

P.I., NASA ADP, awarded March 1989, \$30k

MEMBERSHIP on ADVISORY COMMITTEES

NRAO Users Committee, 2005-2009
SAO Council 2004 - 2008
SAO Predoctoral Program Committee 2004
CfA Data Policy Committee, CfA, 2000-2002

REFEREEING ACTIVITIES

Last 5 years:

NHFP Selection Panels 2018 - 2020

Recruit ~14 panelists for 2 panels:

Compact Objects & Accretion, Physics & Cosmology

Together with 2 other NHFP Leads

Design the selection process from scratch

Work with NASA admin to arrange honorarium, travel, lodging, catering, etc.

Assign applicants to Primary and Secondary reviewers

Mitigate reviewer conflicts

Interact with panelists & Chair to manage application grading & triage

Oversee discussion, ranking and selection of applicants

Manage host choice of applicants and consult with ST Grants admin on budget awards

Einstein Selection (2009 - 2017)

Write and post Ads and Announcement of Opportunity

Oversee review and upgrades of application software

Recruit ~12 panelists and Chair

Work with Admin to arrange travel, lodging, catering, etc.

Assign applicants to Primary and Secondary reviewers

Mitigate reviewer conflicts

Manage application triage

Oversee discussion, ranking and selection of applicants

Manage host choice of applicants and consult with Grants admin on budget awards

Review Panels

Chaired an XMM OTAC Cycle 19 panel on AGN and clusters

Participated in XMM OTAC Chairpersons Meeting to judge XMM Large Programs

Journal articles

PLOS-ONE on a X-ray binary SMBH candidate

ApJL on quasar spectroscopic variability

ApJ on X-rays from a planetary nebula central star.

MNRAS on AGN classified by X-ray hardness variability.

Observing Proposals

two observing proposals for the Chinese National Astronomical Observatory

external review for an HST proposal on quasar reverberation mapping

>5 years ago:

Board of Editors

ISRN Astronomy and Astrophysics, 2010-

Referee for Articles or Books

ApJ (13 articles)

ApJ Letters (4)

AJ (4)

A&A (2)

MNRAS (3)

Astronomy Education Review (3)

Fizika A & B (1)

COSPAR Proceedings (1)

University of California Press, "The Constant Fire", 2006

Review Panels

CfA OIR TAC, 2013-2015

Suzaku, 2015

Hubble, 2012

XMM-Newton, 2009, 2011

Gemini, 2006

NOAO, 1992, 2001A, 2002A, 2002B

Chandra Deepest Fields, 2001

UKIRT, 1999

CFHT, 1995, 1996

Grant Reviews, etc.

Chilean Research Fund Council FONDECYT, 2006

Tenure Promotion Committee external reference, 2003

U.S. Civilian Research and Development Foundation, 2001

NASA ADP/LTSA, 1998

Israeli Science Foundation, 1997

U.K. PPARC, 1997

RESPONSIBILITY for SCIENTIFIC MEETING and CONFERENCES

Chandra Peer Review

Annually, since 2003

- select and recruit all AGN panel Chairs and reviewers (3 panels of ~8)
- assign all (~180) AGN proposals to reviewers by expertise
- identify and resolve reviewer/proposal conflicts

Also,

Select sub-TAC for Chandra Deep Field South Special Call, 2010

NHFP Symposia

Annually, 2009-2020, work with 2 other NHFP Lead Scientists (STScI, NExScI) to

- choose dates, venue
- work with NRESS on logistics and planning
- contact relevant Fellows
- choose Fellows to join SOC
- solicit registration and abstracts
- develop 3-5 day program, including special sessions e.g., Benefits, Diversity, Open Mic

Einstein Symposia

Annually, 2009-2018

- choose dates, hotel, reserve Phillips Auditorium, contact active Fellows
- work with ITs to develop registration/abstract submission page
- develop 2-day program, recruit session Chairs and Keynote speaker
- work with admin on catering, ID tags, printing, etc.
- arrange for video and posting of videos, PDF presentations
- seek Fellows' suggestions for improvements to Symposia, fellowship policies, etc.

Chandra Science Workshops

Annually, 2004-2014

- select topics
- recruit SOC Chair, serve as LOC Chair
 - The X-ray View of Galaxy Ecosystems LOC Chair, 2014
 - X-ray Binaries LOC Chair, 2012
 - Structure in Clusters and Groups of Galaxies LOC Chair, 2011
 - Accretion Processes in X-Rays LOC Chair, 2010
 - Supernova Remnants and Pulsar Wind Nebulae LOC Chair, 2009
 - Radio Galaxies in the Chandra, LOC Chair, 2008
 - X-Ray Grating Spectroscopy, 2007, LOC Chair
 - Extragalactic Surveys , 2006, SOC Chair
 - Star Formation in the Era of Three Great Observatories, 2005, LOC Chair
 - Galaxies Viewed with Chandra, 2004, SOC Chair
- Cosmos in the Classroom Symposium, Tufts U., 2004, LOC Member

Chandra Users Committee

Annually, from 2003-2014

- recruit appropriate members from the astronomical community
- develop agenda in consultation with Chandra Director, CXC group leaders, community input, and the CUC
- organize administrative support and materials
- speak on topics of interest to CUC

EDUCATIONAL ACTIVITIES

Public Astronomy Talks

Arlington Community Education

4-class series *Tour of the Universe*, Winter 2020

5-class series *Astronomy & Our Universe*, Fall 2020

Carroll School, Lincoln, MA

Our Grand Universe, June 2018

CfA Public Observatory Nights

Boston-area K-12 classes

Belmont Retired Mens Club

Volunteer Lecturer, Boston Partners in Education

Author, Peer Instruction for Astronomy, Prentice-Hall 2002, Instructor's Guide

Coordinator, ConcepTest Web Library, 1997 – present

Guest lecturer for Introductory College Astronomy at

Tufts University

Harvard University

Harvard University Extension School

Wellesley College

Author, encyclopedia articles

World Book (Star; White Dwarf)

Encyclopedia of Time (Big Bang Theory; X-ray Universe)

McGraw-Hill Science Yearbook (Dark Matter)

Previous Teaching

Astronomy Teaching Assistant, U.WA, 1986

Physics Teaching Assistant, Physics Ed. Group, U.Wa, 1984 – 1986

Secondary Physics Teacher (in French), Peace Corps, Togo, West Africa 1982 – 1984