

# CURRICULUM VITAE

## JOHN P. HUGHES

### Professional History

- 2022 – Chair, Dept of Physics and Astronomy, Rutgers University
- 2011 – Distinguished Professor, Rutgers University
- 2005 – 2011 Professor, Rutgers University
- 2000 – 2005 Associate Professor, Rutgers University
- 1996 – 2000 Assistant Professor, Department of Physics and Astronomy,  
Rutgers University, New Brunswick, NJ
- 1988 – 1996 Staff Scientist, Harvard-Smithsonian Center for Astrophysics,  
Cambridge, MA
- 1984 – 1987 Postdoctoral Fellow, Harvard-Smithsonian Center for Astrophysics,  
Cambridge, MA

### Education

- 1984 Columbia University, Ph.D., Physics
- 1980 Columbia University, M.A., Physics
- 1978 Columbia College, A.B., Physics

### Awards and Appointments

- 2021 – George A. and Margaret M. Downsbrough Chair in Astrophysics
- 2021 Fellow, American Astronomical Society (first elected cohort)
- 2017 Visiting Scholar, Center for Computational Astrophysics,  
Flatiron Institute
- 2014 *PASJ* Excellent Paper Award 2014: co-author of Bautz et al.,  
“*Suzaku* Observations of Abell 1795: Cluster Emission to  $r_{500}$ ”
- 2010 – 2013 Elected member, Executive committee of the High Energy  
Astrophysics Division of the American Astronomical Society
- 2009 Rutgers University Board of Trustees Award for  
Excellence in Research
- 2008 Fellow, American Physical Society
- 2006 – 2007 Visiting Fellow, Department of Astrophysical Sciences,  
Princeton University
- 1999 – 2000 Visiting Scientist, Service d’Astrophysique, CEA-Saclay
- 1993 NASA Public Service Medal
- 1993 Visiting Research Scientist, Kyoto University, Japan
- 1992 NASA Group Achievement Award for *AXAF* VETA
- 1992 Smithsonian Institution Special Achievement Award
- 1991 NASA Group Achievement Award for *ROSAT*
- 1985 Japanese Foreign Research Fellow, The Institute of Space  
and Astronautical Science, Tokyo, Japan
- 1984 – 1996 Associate, Harvard College Observatory
- 1984 – 1987 Smithsonian Postdoctoral Fellow
- 1978 – 1980 Columbia University Faculty Fellow

1977 Summer Research Assistant, Bell Labs, Murray Hill, NJ

### Professional Activities (current/on-going)

since 2020 Chair, Finance and Audit Subcommittee, SALT Board  
since 2020 Member, Board Executive Subcommittee, SALT Board  
since 2018 External reviewer, Giant Metrewave Radio Telescope TAC  
since 2015 NASA-endorsed member, *Athena* Study Science Team (ASST) Working Groups  
since 2014 Co-Investigator, Advanced ACTPol, NSF funded (2015–2019)  
since 2012 Rutgers Director, Southern African Large Telescope (SALT) Board  
since 2011 Reviewer, NASA Postdoctoral Program  
since 2010 Proposal review, Astronomy Program, CONICYT (Chile)  
since 2008 Proposal review, Canadian NSERC  
since 2008 Member, Editorial Board “Advances in Astronomy”  
since 2005 Guiding Board Member, Atacama Cosmology Telescope (ACT), ACTPol, & AdvACTPol  
since 2005 Proposal review, US-Israel Binational Science Foundation  
since 2004 Proposal review, Swiss National Science Foundation  
since 2003 Member, Deep Lens Survey project team  
since 2001 Referee, Italian Space Agency  
since 1990 Referee, *ApJ*, *MNRAS*, *Astr. & Ap.*, *Nature*, *AJ*, *PASJ*, *Advances in Space Research*, *PNAS*  
since 1986 Visiting Astronomer, NOAO facilities in La Serena, Chile, and AZ, USA

### Professional Activities (completed)

2018 – 2021 Advisor, Simons Observatory SZ Analysis Working Group  
2017 – 2019 Member, Scientific organizing committee for the conference “SNR II: An Odyssey in Space after Stellar Death” June 2019, Chania, Crete, Greece  
2017 – 2019 Member, SO Speakers Bureau, Publication & Membership Committees  
2017 Reviewer, White Papers for Lynx Pathfinder Science with *Chandra*  
2009 – 2017 Selected member, *Hitomi* (*ASTRO-H*) International Science Working Group  
2015 Member, International Scientific organizing committee for “Science with SALT Conference 2015” Stellenbosch, South Africa  
2013 Member, X-ray Astrophysics Probe Science & Technology Definition Team  
2012 Referee, NASA *Chandra* AO-14 program review  
2011 Member, Nominating committee of the APS DAP  
2009 – 2012 Member, NASA Astrophysics Subcommittee  
2009 – 2015 Co-Investigator, ACTPol, NSF funded (2010–2015)  
2008 – 2011 Member, *International X-Ray Observatory* science definition team  
2007 Member, International Scientific organizing committee for “The *Suzaku* X-Ray Universe” conference, San Diego, CA  
2006 Referee and chair, *Chandra* Fellows Selection Committee  
2006 Member, International Scientific organizing committee for “The Extreme Universe in the *Suzaku* Era” conference, Kyoto, Japan

2005 – 2015 Member, *Suzaku* Steering Committee  
 2005 – 2010 Member, *Suzaku* Users' Committee  
 2005 Referee, ESA *XMM-Newton* AO-5 program review  
 2004 – 2006 Collaborator, *Generation-X* mission concept study team  
 2004 – 2005 Member, NASA "Structure and Evolution of the Universe" (SEU) Advisory Committee  
 2004 – 2005 Member, International Scientific organizing committee for "The X-ray Universe 2005" conference, El Escorial, Spain  
 2004 – 2005 Member, NASA "Universe" Legacy Roadmap team  
 2003 – 2005 Member, Study team for the workshop "Physics of SNRs in the *Chandra*, *XMM-Newton* and INTEGRAL Era" International Space Science Institute (Bern, Switzerland)  
 2003 Member, NASA/MSFC Independent Implementation Review of the *Chandra X-ray Observatory*  
 2003 Member, Scientific organizing committee for the "1st Constellation-X Spectroscopy Workshop," New York, NY  
 2002 Referee, ESA *XMM-Newton* AO-2 program review  
 2001 Referee, *Chandra* Fellows Selection Committee  
 2001 Referee, NASA *Chandra* AO-3 program review  
 2001 Member, Scientific organizing committee for the workshop "Neutron Stars in Supernova Remnants (II)," Boston, MA  
 2000 – 2004 Member and chair (2002–2004), *Chandra* Users' Committee  
 2000 – 2002 Member, International advisory committee for the seventh "Nuclei in the Cosmos" symposium  
 2000 Referee, NASA SMEX program review  
 1999 – 2000 Member (ex officio), US *Astro-E* Users' Committee  
 1999 Referee, ESA *XMM-Newton* AO-1 program review  
 1999 Proposal reviewer for the National Science Foundation  
 1999 Represented the Committee on International Space Programs at the European Science Foundation meeting (November), Granada, Spain  
 1998 – 2001 Member, Committee on International Space Programs, Space Studies Board, National Research Council  
 1998 Referee and panel chair, NASA *AXAF* AO-1 Program Review  
 1997 – 2008 *Constellation-X Facility* science team member and chair of supernova remnant science panel  
 1997 Member, Scientific organizing committee for the "ASCA Cherry Blossom Workshop," Washington, DC  
 1996 Member, Scientific organizing committee for the conference "X-ray Imaging and Spectroscopy of Cosmic Hot Plasmas," Tokyo, Japan  
 1995 – 2005 *Astro-E* and *Astro-E2* international science working group member and co-chair of galactic diffuse emission science panel  
 1995 Member, Nominating committee of the APS DAP  
 1995 Member, Scientific organizing committee for the workshop "Rates, Codes and Astrophysics," Cambridge, MA  
 1995 Advisor, SAO summer intern program

1994 – 1997 Member, High Throughput X-Ray Spectroscopy (HTXS) science study team (a NASA New Mission Concept study)

1994 Referee and panel chair, NASA *ASCA* AO-3 Program Review

1992 – 1995 Member, NASA HEAMOWG

1991 – 1995 Chair, US *Astro-D* Users' Committee

1991 – 1996 Visiting Astronomer, Whipple Observatory

1990 P.I., SI International exchange program grant

1989 – 1996 Visiting Astronomer, Multiple Mirror Telescope

1989, 1990 Visiting Astronomer, ESO, La Silla, Chile

1989 – 1991 Research project supervisor in Astronomy 98 and 99, Harvard University

1988 Referee, NASA *Ginga* Visiting investigator program review

1988, 1990 Referee, NASA ADP review

1988 – 1993 NSF Japanese language fellowship

1982 – 1983 Instructor, New York Institute of Technology, New York, NY

### Grant Funding

2016 – 2022	NSF AAG program	1 grant	\$398,625
2015 – 2022	<i>Hitomi</i> SWG program	1 grant	\$150,000
2005 – 2011	NSF PIRE program	1 grant	\$622,855
2005 – 2010	<i>Suzaku</i> GO program	2 grants	\$228,617
2000 –	<i>Chandra</i> GO program	34 grants	\$2,218,816
2000 –	<i>XMM-Newton</i> GO program	16 grants	\$680,745
1997 –	<i>HST</i> GO program	8 grants	\$403,532
1996 – 2008	NASA LTSA program	2 grants	\$1,226,856
1993 – 1999	<i>ASCA</i> GO program	5 grants	\$173,271
1990 – 1999	<i>ROSAT</i> GO program	7 grants	\$213,757
1988 – 1993	NSF Japan program	3 grants	\$49,949
1987 – 1992	<i>Ginga</i> GO program	4 grants	\$240,231
1987 – 2018	NASA ADP program	4 grants	\$554,688

### Professional Societies

American Physical Society  
 American Astronomical Society  
 International Astronomical Union

### Research Interests

Multiwavelength observations of supernova remnants (SNRs) and galaxy clusters  
 Hydrodynamical models for SNR evolution  
 Nonequilibrium ionization in SNR X-ray spectra  
 Observational constraints on nucleosynthesis  
 Particle acceleration at shocks  
 Mass determination in clusters of galaxies  
 Sunyaev-Zel'dovich effect surveys of galaxy clusters  
 Astrophysics of merging clusters  
 Galaxy clusters as probes of cosmology and dark matter

## Courses Taught (recent)

Semester	Course	Level	Enrollment
Spring 2022	Phy 110 Astronomy & Cosmology	unm	52
Fall 2021	Honors Seminar “Einstein”	unm	15
Spring 2021	Sabbatical leave		
Fall 2020	Phy 442 High Energy Astrophysics	um	14
Spring 2020	Phy 514 Radiative Processes	grad	2
Fall 2019	Phy 109 Astronomy & Cosmology	unm	125
Spring 2019	Phy 514 Radiative Processes	grad	3
Fall 2018	Phy 442 High Energy Astrophysics	um	14
Spring 2018	Phy 514 Radiative Processes	grad	5
Fall 2017	Sabbatical leave		
Spring 2017	Phy 514 Radiative Processes	grad	5
Fall 2016	Phy 109 Astronomy & Cosmology	unm	138
Spring 2016	Phy 441 Stars and Star Formation	um	14
Fall 2015	Phy 442 High Energy Astrophysics	um	17
Spring 2015	Phy 110 Astronomy & Cosmology	unm	127
Fall 2014	Sabbatical leave		

Notes:

Level: graduate (grad), undergraduate majors (um), undergraduate non-majors (unm)

## Graduate Student Supervision (PhD only)

XiaoChen Fang	20 Aug 2022	Thesis cmte.
Ramon Sharma	24 May 2022	Thesis cmte.
Catie Raney	23 Mar 2021	Thesis cmte.
Anna Wright	16 July 2020	Thesis cmte.
Humna Awan	26 Feb 2020	Thesis cmte.
Peter Doze	2017 – 2023	Primary advisor
Prasiddha Arunachalam	2016 – 2023	Primary advisor
Jesse Rivera	16 Jul 2019	Thesis cmte.
Carl Mitchell	6 Jul 2017	Thesis cmte.
Kyle Dettman	Summer 2015	Research advisor
Toshiki Sato	2015 – 2018	Science advisor (non-RU)
Yuan Li	8 May 2014	Thesis cmte. (non-RU)
Michael Berry	7 Apr 2014	Thesis cmte.
Robert Lindner	9 Jul 2013	Thesis cmte.
Chelsea Sharon	2 Apr 2013	Thesis cmte.
Mario Riquelme	9 July 2010	Thesis cmte. (non-RU)
Ricardo Sanchez	21 Sept 2009	Thesis cmte.
Fabio Acero	2008	Thesis cmte. (non-RU)
Amruta Deshpande	2008 – 2016	Primary advisor
Luke Hovey	2007 – 2016	Primary advisor
Matthew R. Francis	May 2005	Thesis cmte.
Andreas Zech	Oct 2004	Thesis cmte.
Jianxiang Wang	Oct 2004	Thesis cmte.

Arend Sluis	Jan 2004	Thesis cmte.
Neelima Sehgal	2004 – 2008	Primary advisor
Jessica S. Warren	2001 – 2006	Primary advisor
Cara Rakowski	1999 – 2003	Primary advisor
Ilana Harrus	1992 –1997	Primary advisor (non-RU)
Una Huang	1991 –1994	Science Advisor (non-RU)

### Undergraduate Student Supervision

Zoe Rosenberg	Spr 2021-current	Project SUPER
Julia Ludwig	Summer 2021	Research
Maya Settimi	Spr+Sum 2020	Project SUPER
Brian Jiang	A.Y. 2019-21	Research
Neeharika Thuravil	A.Y. 2019-20	Project SUPER
Sara M. Koshy	Spring 2018	Project SUPER
Christina Kuznetsova	Spring 2018	Project SUPER
Cole Bisaccia	Summer 2017	Research
Ingrid Zimmerman	Spring 2017	Project SUPER
Matt Rutala	A.Y. 2016-17	Dept. senior honors thesis
Jessica Kerman	Spr+Sum 2016	Project SUPER
Ian Stewart	A.Y. 2015-16	Dept. senior honors thesis
Matt Rutala	A.Y. 2015-16	Research
Kevin Feigelis	Fall 2015	Research
Alexis Freiling	Spring 2015	Project SUPER
August Miller	Summer 2014	RU NSF REU
Ryan Blackman	Summer 2013	RU NSF REU
Elizabeth Tatum	Summer 2012	Aresty Summer Research
Siddharth Tripathi	Summer 2011	Research
Virgil Sciabarrasi	Summer 2011	Research
Samia Bouzid	Summer 2009	Aresty Summer Research
Joe Rodriguez	Summer 2008	Research
Beata Shahriari	Summer 2008	Research
Ian Cohen	Summer 2008	Research
Kent Patterson	Summer 2006	Aresty Summer Research
Nate Odell	A.Y. 2005-06	Dept. senior honors thesis
Jon Zrake	Summer 2005+06	Research
Marc A. Rafelski	Summer 2004	Research
Matthew Klimek	Spr+Sum 2004	Research
Robert Friedman	A.Y. 2003-04	Henry Rutgers Scholar honors thesis
Robert Friedman	A.Ys. 2001-03	Work-study research
Robert Friedman	Summer 2001	Richard Plano Fellowship
Thomas Brink	Spring 2001	Independent study (Res. in Physics)
Eilat Glikman	A.Y. 1998-99	Research
Joe Schirippa	A.Y. 1996-97	Dept. senior honors thesis
Kenneth Banas	Summer 1995	CfA NSF REU
David Yoon	1990	Research (Harvard)

Claude J. Poux                      1988                      Research (Harvard)

Notes:

SUPER = Science for Undergraduates: A Program for Excellence in Research at the  
Douglass Residential College

REU = Research Experiences for Undergraduates

CfA = Harvard-Smithsonian Center for Astrophysics

### Postdoctoral Scholar Supervision

Toshiki Sato	2018 – 2020	Science advisor (non-RU)
Steven Boada	2016 – 2020	Primary advisor
Aurelia Pascut	2014 – 2018	Primary advisor
Kristoffer Eriksen	2009 – 2012	Primary advisor
Felipe Menanteau	2006 – 2013	Primary advisor
Carles Badenes	2006 – 2007	Primary advisor ( <i>Chandra</i> Fellow)
Gamil Cassam-Chenai	2005 – 2008	Primary advisor
Carles Badenes	2004 – 2006	Primary advisor
Sandor Molnar	2001 – 2004	Primary advisor
Parviz Ghavamian	2000 – 2003	Primary advisor
Marc Gagné	1998 – 1999	Primary advisor
Percy Gomez	1997 – 2000	Primary advisor

### Selected Service to the Department, School, or University

Spring 2022	Chair, Kristen McQuinn Re-appointment Committee (ad hoc)
Fall 2021	Chair, Yao-Yuan Mao Retention Committee (ad hoc)
2021 – 2022	Graduate Studies & Life, Policy, Undergraduate Advising
2020 – 2021	Faculty Honors, Ph.D. Qualifier
2019 – 2021	Member, Decanal Review Committee for Executive Dean Peter March
2019 – 2020	Ph.D. Qualifier
2018 – 2019	Faculty Honors, Ph.D. Qualifier
since 2017	Member and PI, Rutgers' Collaborating Institution Membership for Simons Observatory (SO)
2017	Led Rutgers' effort to join Simons Observatory (SO)
2017 – 2018	Colloquium, Astro Seminar, Ph.D. Qualifier
2016 – 2017	Graduate Recruiting
Spring 2015	Chair, Astro Faculty Search Committee
2015 – 2016	Graduate Recruiting, Teaching Peer Review
2011 – 2022	Chair, Rutgers SALT TAC
Spring 2010	Chair, Department Chair Election Committee
2007 – 2022	Chair, Department Building/Space Committee
2007 – 2010	Rutgers representative, SALT science working group
2005 – 2006	Member, Dean's Advisory Committee for Appointments and Promotions
2004 – 2005	Member, "New Directions" (Long Range Planning) Committee
2002 – 2003	Chair, Physics Colloquium Committee
2002 – 2003	Member, Department Peer Evaluation Committee (elected)
2000 – 2002	Member, Department Long Range Planning Committee

### Selected Invited Presentations

- 1994 “*ASCA* Guest Observer Program and First Supernova Remnant Results,” invited talk at the 183<sup>rd</sup> meeting of the American Astronomical Society (11–15 January, Washington, DC) (*Bull. Amer. Astr. Soc.*, **25**, 1430).
- 1994 “Using the Sunyaev-Zel’dovich Effect in Galaxy Clusters for Determining the Hubble Constant: Recent Progress and Future Promise,” seminar at the Department of Astronomy, Yale University (8 April, New Haven, CT).
- 1994 “X-ray Observations of Remnants of Type Ia SNe in the Local Group,” invited talk at the 1994 Meeting of the AAS High Energy Astrophysics Division (2–5 November, Napa Valley, CA).
- 1994 “Abundance Determinations from X-ray Observations of SNRs,” seminar to the CfA Supernova Remnant Group, (9 November, Cambridge, MA).
- 1995 “Using the Sunyaev-Zel’dovich Effect in Galaxy Clusters to Determine the Hubble Constant: Recent Progress and Future Promise,” seminar at the Department of Physics and Astronomy, Rutgers University (23 March, Piscataway, NJ).
- 1995 “X-ray Observations of Remnants of Type Ia Supernovae in the Local Group,” seminar at the Department of Astronomy, Columbia University (27 April, New York, NY).
- 1995 “X-Ray Observations of Remnants of Type Ia Supernovae,” invited lecture at the NATO ASI on Thermonuclear Supernovae, (20–30 June, Parador d’Aiguablava, Begur, Spain).
- 1995 “Physical Processes in Shocked Plasmas,” invited talk at the *AXAF* Science Center Workshop “Rates, Codes, and Astrophysics,” (17–20 July, Cambridge, MA).
- 1996 “The Expansion of Tycho’s Supernova Remnant,” seminar to the CfA Supernova Remnant Group, (29 January, Cambridge, MA).
- 1996 “Supernova Remnants and Cosmic Abundances,” invited presentation at the High Throughput X-Ray Spectroscopy Workshop, (29 September–1 Oct, Boston, MA).
- 1996 “Untangling the Riddle of the Supernova Remnant W44,” seminar at the NASA/GSFC Laboratory for High Energy Astrophysics, (26 November, Greenbelt, MD).
- 1997 “X-rays from Young SNRs,” invited talk at the Minnesota SNR Workshop “ $10^{51}$  Ergs: The Evolution of Shell SNRs,” (23–26 March, Minneapolis, MN).
- 1997 “Recent X-ray Observations of Supernova Remnants,” invited talk at the 190<sup>th</sup> meeting of the American Astronomical Society (9–12 June, Winston-Salem, NC) (*Bull. Amer. Astr. Soc.*, **29**, 827).
- 1997 “X-ray Observations of Supernova Remnants,” invited talk at the conference “Supernova Explosions: Their Causes and Consequences,” (5–9 August, Institute for Theoretical Physics, Santa Barbara, CA).
- 1997 “Hot Electrons and Cold Photons: Galaxy Clusters and the Sunyaev-Zel’dovich Effect,” invited talk at IAU Symposium No. 188, “The Hot Universe,” (26–30 August, Kyoto, Japan).



- 1997 “Hot Electrons and Cold Photons: Galaxy Clusters and the Sunyaev-Zel’dovich Effect,” Pennsylvania State University, Astronomy and Astrophysics Colloquium (8 October, University Park, PA).
- 1998 “Hot Electrons and Cold Photons: Galaxy Clusters and the Sunyaev-Zel’dovich Effect,” University of Pennsylvania, Astronomy and Astrophysics Colloquium (6 March, Philadelphia, PA).
- 1998 “Hot Electrons and Cold Photons: Galaxy Clusters and the Sunyaev-Zel’dovich Effect,” Columbia University, Physics Colloquium (3 April, New York, NY).
- 1998 “Understanding Plasmas in Galaxy Clusters,” invited talk at the 1998 Joint APS/AAPT meeting (18–21 April, Columbus, OH).
- 1998 “Supernovae and their Remnants,” invited talk at the 192<sup>nd</sup> meeting of the AAS (8–11 June, San Diego, CA) (*Bull. Amer. Astr. Soc.*, **30**, 876).
- 1999 “Thermal X-ray Emission of Supernova Remnants: the View from *ASCA* and *ROSAT* to *Astro-E*,” invited talk at the *ASCA* Symposium on “Heating and Acceleration in the Universe” (17–19 March, Tokyo, Japan).
- 1999 “Using Supernova Remnants in the Large Magellanic Cloud to Probe Evolution, Progenitors, and the Interstellar Medium,” seminar to the Princeton ISM group, (2 April, Princeton, NJ).
- 1999 “U.S. Views on the *ASCA* Mission,” invited review at the Workshop on U.S.-European-Japanese Cooperation in Space Research (19–21 May, Tokyo, Japan).
- 1999 “How the Intrinsic Shapes of Galaxy Clusters Influence Distance Determinations using the SZ Effect,” invited talk at the 194<sup>th</sup> meeting of the AAS (30 May–3 June, Chicago, IL) (*Bull. Amer. Astr. Soc.*, **31**, 915).
- 2000 “Nucleosynthesis and Mixing in the Supernova Remnant Cassiopeia A,” seminar at Centre d’Etudes de Saclay, Service d’Astrophysique (20 January, Saclay, France).
- 2000 “Recent Advances in the S-Z Observations of Clusters of Galaxies,” *Le Thé de la Cosmologie* seminar at Centre d’Etudes de Saclay, Service d’Astrophysique (7 March, Saclay, France).
- 2000 “Nucleosynthesis and Mixing in the Supernova Remnant Cassiopeia A,” seminar at Osservatorio Astrofisico di Arcetri (6 April, Firenze, Italy).
- 2000 “*Chandra* X-ray Spectroimagery of Supernova Remnants,” invited talk given at the symposium “New Vistas from X-Ray Observatories” during the 33rd COSPAR Scientific Assembly (16–23 July, Warsaw, Poland).
- 2000 “Young Supernova Remnants in the Magellanic Clouds,” invited talk at the 11<sup>th</sup> Annual October Maryland Astrophysics Conference “Young Supernova Remnants” (16–18 October, Greenbelt, MD).
- 2001 “*Chandra* Views of the Supernova Remnant/Compact Object Connection,” invited talk at the 197<sup>th</sup> meeting of the AAS (7–11 January, San Diego, CA) (*Bull. Amer. Astr. Soc.*, **32**, 1560).
- 2001 “Sharper Views of Magellanic Cloud Supernova Remnants,” invited talk at the *Chandra* Science Symposium (16–18 July, St. Paul, MN).

- 2001 “*Chandra* View of Nucleosynthesis, Pulsars, Cosmic Rays and More!” University of Massachusetts, Astronomy Colloquium (1 November, Amherst, MA)
- 2002 “Instabilities and Cosmic Ray Acceleration in Supernova Remnants,” invited talk at the 4th International Conference on High Energy Density Laboratory Astrophysics (23–25 Feb, Ann Arbor, MI).
- 2002 “A Tale of Two Remnants,” lunchtime seminar at STScI (14 March, Baltimore, MD).
- 2002 “A Tale of Two Remnants: Cassiopeia A and G292.0+1.8,” seminar at the NASA/GSFC Laboratory for High Energy Astrophysics (21 May, Greenbelt, MD).
- 2002 “X-ray Spectral Morphology of Young Supernova Remnants,” invited talk given at the symposium “High Energy Studies of Supernova Remnants and Neutron Stars” during the 34th COSPAR Scientific Assembly (10–12 October, Houston, TX).
- 2003 “Supernova Remnants and the Interstellar Medium,” invited talk given at the 201st meeting of the AAS (5–9 Jan, Seattle, WA) (*Bull. Amer. Astr. Soc.*, **34**, 1270).
- 2003 “Abundances from Supernova Remnants,” invited talk given at the Carnegie Observatories Astrophysics Symposium 4 “Origin and Distribution of the Elements” (16–21 February, Pasadena, CA).
- 2003 “New Insights into Supernova Remnants from Four Years of *Chandra* Observations,” invited talk given at the symposium “Four Years of *Chandra* Observations: A Tribute to Riccardo Giacconi” (16–18 September, Huntsville, AL).
- 2004 “Observing Nucleosynthesis in Type Ia Supernova Remnants,” invited talk given at the symposium “Young Neutron Stars and Supernova Remnants” during the 35th COSPAR Scientific Assembly (18–25 July, Paris, France).
- 2004 “Searching for Galaxy Clusters in the Dark,” Astronomy Seminar, Rutgers University (8 October, Piscataway, NJ).
- 2005 “New Insights into the Physics of Supernovae and their Remnants: A Comprehensive X-ray Study of SN 1572,” McGill University and Université de Montréal, Joint Astrophysics Colloquium (13 September, Montréal, CA).
- 2005 “New Insights into the Physics of Supernovae and their Remnants: A Comprehensive X-ray Study of SN 1572,” Kyoto University, Astrophysics Seminar (18 October, Kyoto, Japan).
- 2006 “Evidence for the Hadronic Component of Cosmic Rays at the Forward Shock of Tycho’s Supernova Remnant,” seminar to the Princeton ISM group (16 January, Princeton, NJ).
- 2006 “Review of X-Ray Observations of Core Collapse SNRs,” invited talk given at the KITP Conference: Supernova and Gamma-Ray Burst Remnants (6 February, Santa Barbara, California).
- 2006 “X-ray Observations of the Tycho Supernova Remnant,” invited talk given at the 208th meeting of the AAS (4–8 June, Calgary, CA).
- 2006 “Constraints on SN Ia from Their Remnants: X-ray Studies of the Tycho SNR”, invited talk at Joint Discussion 9 during the 26th meeting of the International Astronomical Union, (17–18 August, Prague, Czech Republic).

- 2006 “New Insights into the Physics of Supernovae and their Remnants: A Comprehensive X-ray Study of SN 1572,” Harvard University, Astronomy Colloquium, (21 Sept, Cambridge, MA)
- 2006 “Recent and Future Topics Concerning the X-Ray Emission from Supernova Remnants,” invited talk at the conference “Extreme Universe in the *Suzaku* Era” (4–8 December, Kyoto, Japan)
- 2007 “New Insights into the Physics of Supernovae and their Remnants: A Comprehensive X-ray Study of SN 1572,” Princeton University, Astrophysics Colloquium, (6 March, Princeton, NJ)
- 2007 “ACT: The Atacama Cosmology Telescope,” invited talk at the SCS/PIRE Summer School on the Large Scale Structure – CMB connection (23 March, Santiago, Chile)
- 2007 “New Insights into the Physics of Supernovae and their Remnants: A Comprehensive X-ray Study of SN 1572,” Pennsylvania State University, Astrophysics Colloquium, (11 April, State College, PA)
- 2007 “Spectral Inhomogeneities in SNIa Remnants,” invited speaker of the week, (8 May, KITP UC Santa Barbara CA)
- 2008 “Recent X-ray Results on Supernova Remnants,” invited talk at the “The X-ray Universe 2008” symposium, (27–30 May, Granada, Spain)
- 2009 “A Tale of Two Remnants: Cosmic Rays in SN1006 and SN1572,” the Astronomy CSSA-KIPAC-SLAR Seminar, (11 June, Stanford, CA)
- 2009 “First Results from the Atacama Cosmology Telescope: SZ Detections of Galaxy Clusters,” Pontificia Universidad Católica de Chile, Astronomy Colloquium, (20 August, Santiago, Chile)
- 2009 “SZ-Selected Clusters from the New mm-Wave Telescopes: ACT and SPT,” SALT/MeerKAT Science Workshop, (3 November, Cape Town, South Africa)
- 2009 “First Results from the Atacama Cosmology Telescope: SZ Detections of Galaxy Clusters,” HEAD lunch talk at the Harvard-Smithsonian Center for Astrophysics, (2 December, Cambridge, MA)
- 2009 “What’s New from the Atacama Cosmology Telescope?” invited talk at the Rutgers-PUC Astrophysics Workshop 2009, (14-15 December, Santiago, Chile)
- 2009 “First Results from the Atacama Cosmology Telescope: SZ Detections of Galaxy Clusters,” Universidad de Chile, Astronomy Colloquium, (16 December, Santiago, Chile)
- 2010 “Observational Constraints on Cosmic Ray Acceleration in Supernova Remnants,” invited talk at the APS “April” Meeting (13-17 February, Washington, DC)
- 2010 “Recent X-ray Results on Young Supernova Remnants,” invited talk at the workshop “Exploring Supernova Remnants and Pulsar Wind Nebulae in X-rays: before and after ASTRO-H” (18-20 February, ISAS, Sagamihara, Japan)
- 2010 “First Results from the Atacama Cosmology Telescope: SZ Detections of Galaxy Clusters,” Columbia University, Astronomy Colloquium (3 March, New York, NY)

- 2010 “First Results from the Atacama Cosmology Telescope: SZ Detections of Galaxy Clusters,” University of Maryland, Astronomy Colloquium (21 April, College Park, MD)
- 2010 “Clusters and Cosmology from the Atacama Cosmology Telescope,” Yale University, Astronomy Colloquium (21 October, New Haven, CT).
- 2010 “Clusters and Cosmology from the Atacama Cosmology Telescope,” University of Miami, Physics Colloquium (1 December, Coral Gables, FL)
- 2011 “Clusters and Cosmology from the Atacama Cosmology Telescope,” Pennsylvania State University, Astrophysics Colloquium, (31 August, State College, PA)
- 2012 “*El Gordo*: the Most Massive Known Cluster in the Distant Universe,” University of Pittsburgh, Physics Colloquium, (16 April, Pittsburgh, PA)
- 2013 “Clusters and Cosmology from the Atacama Cosmology Telescope,” MPIA, Astrophysics seminar (27 May, Heidelberg, Germany)
- 2014 “Evidence for Cosmic Ray Acceleration from X-ray/gamma-ray observation of SNRs,” invited talk given at the symposium “Origin of Cosmic Rays” during the 40th COSPAR Scientific Assembly (2–10 August, Moscow, Russia).
- 2015 “El Gordo (ACT J0102–4915) and Beyond,” invited talk at the conference “Cosmology on Safari” (26–30 January, KwaZulu-Natal, South Africa).
- 2015 “Clusters and Cosmology from the Atacama Cosmology Telescope and *Planck*,” University of Utah, Physics & Astronomy Colloquium, (12 March, Salt Lake City, UT).
- 2015 “Evidence for Cosmic Ray Acceleration from X-ray and  $\gamma$ -ray Observations of Supernova Remnants,” University of Utah, High Energy/Astrophysics (HEAP) Seminar, (13 March, Salt Lake City, UT).
- 2015 “No Evidence for Cosmic Ray Acceleration from the Balmer Shocks in Supernova Remnant 0509–67.5,” invited talk at the workshop “Accelerating Cosmic Ray Comprehension” (13–16 April, Princeton, NJ).
- 2016 “Advances in X-Ray and  $\gamma$ -Ray Studies of Supernova Remnants,” invited review talk at the 14<sup>th</sup> International Symposium on Nuclei in the Cosmos, NIC-XIV, (19–24 June, Niigata City, Japan).
- 2016 “On the Trail of the Most Massive Galaxy Clusters in the Universe,” invited seminar at the Los Alamos National Lab (11 August, Los Alamos, NM).
- 2017 “The Mass, Kinetic Energy, and Chemical Composition of Cas A,” invited panel discussion at the workshop “CSI:Princeton – A Definitive Investigation of the Core-Collapse Supernova Cassiopeia A” (17–19 April, Princeton, NJ).
- 2017 “Searching for the Most Massive Galaxy Clusters,” invited talk at the workshop “SALT Among the Constellation of Very Large Telescopes” (79 June, Kazimierz Dolny, Poland).
- 2017 “The ACTPol Two-Season Galaxy Cluster Catalog,” invited galaxies and cosmology group seminar at the Harvard-Smithsonian Center for Astrophysics (24 October).
- 2017 “De reliqui stella nova in pede Serpentarii (On the remnant of Keplers new star in Ophiuchus’ Foot),” invited high-energy astrophysics seminar at the Harvard-Smithsonian Center for Astrophysics (25 October).