GRANT RUSSELL TREMBLAY

ASTROPHYSICIST
CENTER *for* ASTROPHYSICS | HARVARD & SMITHSONIAN
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EXPERIENCE

2017 *to present*	**Astrophysicist** | Smithsonian Astrophysical Observatory (SAO) Lecturer of Astronomy | Harvard University Department *of* Astronomy Lead | *Lynx X-ray Observatory* Science Support Office **Center *for* Astrophysics** | **Harvard & Smithsonian**, Cambridge, MA, USA
2014 *to* 2017	**Einstein Fellow** | Yale Center *for* Astronomy & Astrophysics **Yale University**, New Haven, CT, USA / Funding via NASA
2011 *to* 2014	**ESO Fellow** | Directorate *for* Science **European Southern Observatory** (ESO), Garching bei München, Germany
2011 *to* 2014	**Fellow Astronomer** | Paranal Observatory Science Operations **ESO Paranal Observatory /** Very Large Telescope, Cerro Paranal, Chile
2006 *to* 2008	**Graduate Research Assistant** | Science Mission Office **Space Telescope Science Institute** (STScI), Baltimore, MD, USA

EDUCATION

2008 *to* 2011	**Ph.D. Astrophysics** **Rochester Institute of Technology**, New York, USA Doctoral Thesis advised by Prof. Christopher P. O'Dea and Prof. Stefi A. Baum: "*Feedback Regulated Star Formation in Cool Core Clusters of Galaxies*"
2006 *to* 2008	Visiting Graduate Student (while doing Thesis work at STScI) **Johns Hopkins University**, Maryland, USA
2002 *to* 2006	**B.S. Physics & Astronomy** **University of Rochester**, New York, USA

RESEARCH

Primary Interests	Star formation amid kinetic and radiative feedback from supermassive black holes Galaxy clusters and their central galaxies, the intracluster medium Galaxy formation, evolution, and dynamics Space Policy and mission development (*Lynx X-ray Observatory*, Europa Lander)
Techniques	Highly multiwavelength analysis including X-ray, ultraviolet, optical, and infrared imaging and spectroscopy (*Chandra*, *HST*, *Spitzer*, & *Herschel*), as well as submillimeter and radio interferometry (ALMA and VLA).

Portfolio consists of seventy-seven publications (fifteen as first author, including in Nature), two books for the general public, and over $2.1M USD in funding (over $630,000 as P.I.)

Leadership Experience

Community Leadership
Vice President (2022-2025)
American Astronomical Society

NASA Committees
Chair of the Executive Committee (2022-2023)
Vice-Chair of the Executive Committee (2020-2021)
X-ray Science Interest Group co-Chair (2020-2023)
NASA Physics of the Cosmos Program Analysis Group (PhysPAG)

Large Collaborations
Lynx X-ray Observatory | **NASA Large Mission Concept Study**
`www.lynxobservatory.org`
Deputy Lead for *Lynx* at SAO | Head of the *Lynx* Science Support Office
Member of the *Lynx* Study Office | Branding, Graphic Design, and Website Lead

The Close AGN Reference Survey (CARS)
`www.cars-survey.org`
Senior Member | X-ray Follow-up Lead

Current Postdoc Supervision
Dr. Rebecca Nevin & **Dr. Bryan Terrazas**
Current Postdoctoral Research Fellows in the Tremblay Group
Center for Astrophysics | Harvard & Smithsonian (2019 *to present*)

Grants & Awards

Telescope Time as Principal Investigator (selected)

Hubble Space Telescope Cycle 28 (2020):
Temporal & Spatial Resolution of Stellar Ages amid Quasar-Driven gas flows
GO Program 16173, **P.I.: G. Tremblay, allocated 33 orbits and $124,575**

Chandra X-ray Observatory Large Program Cycle 18 (2016):
The Hot Phase of a Cold Black Hole Fountain: Unifying Chandra with ALMA
Large Program 18800649, **P.I.: G. Tremblay, allocated 480 ksec and $160,360**

Atacama Large Millimeter/submillimeter Array (ALMA) Cycle 4 (2016):
Resolving Molecular Outflows in nearby Luminous AGN from the CARS Survey
Project Code 2016.1.00952.S, **P.I.: G. Tremblay, Ranked High Priority**

Chandra X-ray Observatory Cycle 17 Director's Discretionary Time (2014):
Catching a Changing Look Quasar as it returns to the Shadows for the Second Time
DDT Program 17708536, **P.I.: G. Tremblay, allocated 30 ksec**

Chandra X-ray Observatory Cycle 17 (2015):
Expanding Superbubbles in Luminous AGN: Unifying Chandra with MUSE
GO Program 177005179, **P.I.: G. Tremblay, allocated 200 ksec and $81,272 USD**

Atacama Large Millimeter/submillimeter Array (ALMA) Cycle 3 (2015):
Beaded Strings of Young Stellar Superclusters between Merging Elliptical Galaxies
Project Code 2015.1.01426.S, **P.I.: G. Tremblay, Ranked High Priority**

Atacama Large Millimeter/submillimeter Array (ALMA) Cycle 1 (2013):
The Cold Phase of a Hot Mode: Filaments & Feedback in Abell 2597
Project Code 2012.1.00988.S, **P.I.: G. Tremblay, Ranked Highest Priority**

Chandra X-ray Observatory Cycle 16 (2014):
A "String of Pearls" between two Merging Elliptical Galaxies
GO Program 17218, **Sci. P.I.: G. Tremblay, allocated 130 ksec and $53,406 USD**

Hubble Space Telescope Cycle 21 (2013):
Ghost Ionization in Cooling Flow Filaments: A Test with Deep FUV Spectroscopy
GO Program 13304, **P.I.: G. Tremblay, allocated 23 Orbits and $64,917 USD**

Very Large Telescope, **Gemini**, **Keck**, **Palomar 200"**, **WIYN**, **Blanco**, & **SOAR**
Fifteen programs as P.I. (Imaging, Spectroscopy, & IFU spectroscopy, incl. Laser AO)

Research Fellowships

Einstein Fellowship
Independent Postdoctoral Fellowship | NASA *Physics of the Cosmos* Mission
Hosted at Yale University, 2014 *to* 2017
Fellowship sponsor: Prof. C. Megan Urry

European Southern Observatory (ESO) Fellowship
Independent Postdoctoral Fellowship | ESO Garching, 2011 *to* 2014

Other Funding

Smithsonian Institution Scholarly Studies Grant (2021) | **$60K**
CfA IR&D funding for the *Lynx X-ray Observatory* Concept Study | **$750K**
NRAO ALMA Ambassadors Program (2017) | **$10K**
New York Space Grant Consortium | **$10K**

Selected Programs as Co-Investigator

- ALMA Cycle 4 Projects 2016.1.(01075 / 01058 / 01214).S, Various P.I.s
- ALMA Cycle 3 Projects 2015.1.(01198 / 01107 / 00627 / 00623).S, Various P.I.s
- ALMA Cycle 2 Project 2013.1.00862.S, P.I.: A. Simionescu
- ALMA Cycle 1 Project 2012.1.00837.S, P.I.: B. McNamara
- ALMA Cycle 0 Project 2011.0.00374.S, P.I.: B. McNamara
- *HST* Cycle 24 DDT Program 14486, P.I.: B. Husemann
- *HST* Cycle 22 GO Program 13638, P.I.: M. Bayliss
- *HST* Cycle 21 GO Program 13422, P.I.: R. Canning
- *HST* Cycle 20 GO Program 13023, P.I.: M. Chiaberge
- *HST* Cycle 18 GO Program 12220, P.I.: R. Mittal
- *Chandra* Cycle 17 GO Program 17700006, P.I.: Massaro, 192 ksec
- *Chandra* Cycle 15 GO Program 15700111, P.I.: Massaro, 276 ksec
- *XMM-Newton* AO-13 Program 074434, P.I.: J. Sanders
- Gemini Program GN-2014A-Q-55, P.I.: O'Dea / Tremblay, 6 hr
- Jansky Very Large Array: 2012B Program 12B-289, P.I.: T. Clarke
- Very Large Telescope Period 86 Program 086.A-0399, P.I.: M. Chiaberge
- *Various (more than 10) other programs on ground-based telescopes*

Awards & Honors

NASA Group Achievement Award
For the *Lynx X-ray Observatory* Concept Study, 2019
Smithsonian Institution Special Achievement Awards
Three awards for *Lynx*, *Light from the Void*, and the HRC Anomaly of 2020
Stoddard Prize
Best thesis in Physics & Astronomy, University of Rochester, 2006
Undergraduate Research Prize
Astronomical Society of New York, 2006
Undergraduate Teaching Prize
Outstanding Teaching in Physics & Astronomy, University of Rochester, 2006
Sigma Pi Sigma
Physics Honor Society
Graduation with High Honors
Graduate, Undergraduate, & Secondary Schools, 2002 *to* 2011

TEACHING

Ph.D. Students (official)

Osase Omoruyi, Harvard University | Ph.D. Astronomy expected by 2025,
Funded & advised by G. Tremblay

Meredith Powell, Yale University | Ph.D. Astrophysics (completed May 2019)
Thesis Project: *Expanding Superbubbles in Luminous AGN*
Funded & advised by G. Tremblay, co-supervised with Prof. C. Megan Urry
Now a Porat Fellow at Stanford University

Invited Visiting Professorship

"You Can't Grow a Black Hole for Free"
Invited lecture series given as Visiting Professor
Universidad Nacional Autónoma de México (UNAM), Mexico, November 2014

Other Teaching

Harvard University, Lecturer of Astronomy
Lectureship appointment was in order to formally supervise Harvard Ph.D. Students (2021 *to present*)

Harvard University | **Banneker & Aztlán Institute**, Advisor
Research Advisor and Instructor for this ten-week summer research experience created to prepare talented undergraduate students of color and other underrepresented groups for studies in top graduate programs in astronomy.

Yale University, Guest Lecturer
Planned and led lectures for 10+ undergraduate astronomy/physics courses.

Teaching Assistant, Dept. of Physics, Rochester Institute of Technology
Physics I (Winter 2008), II (Spring 2009), & III (Fall 2008)
Included planning & leading full lectures

Teaching Intern, Dept. of Physics & Astronomy, University of Rochester
Elementary Astronomy (Fall 2003), Elementary Astrophysics (Spring 2004), Black Holes & Time Warps (Fall 2004 & 2005), Intro. Mechanics (Spring 2005 & 2006)
Awarded U. of Rochester Prize for Outstanding Undergraduate Teaching

Other Students Supervised

Kevin Ortiz Ceballos, Banneker Institute Student (now at Harvard)
Sideena Grace, 2020 Banneker Institute Student (now at MIT)
Keduse Worku & Kevin Ortiz Ceballos, 2019 Banneker Institute Students
Daniel Rodriguez, 2018 Banneker Instutite Student
William Cramer, Yale Ph.D. Student
Tonima Tasnim Ananna, Yale Ph.D. Student
Dominic Eggerman & Nathaniel Kerman, Yale Undergraduates
"Fellow Mentor" for two ESO Ph.D. Students
K. Cooke, RIT Ph.D. student, 2014 *to* 2016
K. Christiansen, RIT Undergraduate, 2010 *to* 2011
B. Litts, High School Student, 2011
K. O'Dea, REU Student, 2010 (resulted in publication with undergrad. as first author)
Several Students in the RIT Insight Lab Summer Program, 2008 *to* 2010

TECHNICAL EXPERIENCE

Professional Telescope Experience

***Chandra* High Resolution Camera | Instrument P. I. Team**
Official SAO duties. Responsible for operations and science analysis of *Chandra X-ray Observatory*'s High Resolution Camera (HRC), as part of the Instrument Principal Investigator team. Operational responsibilities include reviewing *Chandra* command loads to ensure safe operation of the flight instrument, monitoring its health and safety, and analyzing in-flight calibration data. Includes training in commanding, intervention, and spacecraft recovery procedures. **Experience includes major role in recovery from a critical spacecraft anomaly in 2020**.

Support Astronomer | Very Large Telescope (Unit Telescope 2 / Kueyen)
Official ESO duties, 40 nights per year. In charge of the science operation of the telescope including the XSHOOTER, UVES, and FLAMES spectrographs, quality assessment of the data, and the support of visiting astronomers.

Space-based Telescopes

Hubble Space Telescope
Extensive experience (successfully proposing, obs. planning, reduction of data)
Chandra X-ray Observatory
Extensive experience (successfully proposing, obs. planning, reduction of data)
X-ray Multi-Mirror Mission (XMM-Newton)
Substantial experience (successfully proposing, reduction of data)
Spitzer Space Telescope
Substantial experience (proposing, obs. planning, reduction of data)
Herschel Space Observatory
Limited experience (reduction & analysis of data)

Ground-based Telescopes	**Atacama Large Milimeter/submilimeter Array (ALMA)** Extensive experience (successfully proposing, obs. planning, data reduction) **Very Large Telescope** Extensive / direct experience (operations, observation planning, data reduction) **Very Large Array** Some experience (successfully proposing, limited data reduction) **Other Telescopes** Many nights of observing (on-mountain and remote) with the VLT, Keck, Gemini, SOAR 4.1m, Palomar 200", WIYN 3.5m, UKIRT, NASA IRTF, & TNG
Computing skills	**Programming**: Python (fluent), IDL, C/C++, regex, shell scripting, etc. Codes available at: `https://github.com/granttremblay` Formal member of the Astropy team | Deputy lead for `www.astropy.org` **Analysis**: Astropy, AstroConda / DrizzlePac, (Py/I)RAF including STSDAS & NOAO packages, etc., CIAO, XSPEC, Sherpa, MOPEX, HIPE, CASA, DS9 **Presentation**: LaTeX, MatPlotLib, Adobe products (nearly all), SuperMongo **OS**: Linux, macOS, Unix, Solaris, Windows
Multiwavelength Analysis Experience	**X-ray**: Spectral fitting (*Chandra* and *XMM* data), quantitative imaging analysis, spatially resolved spectroscopy techniques (i.e., X-ray spectral maps, deprojection), X-ray time domain analysis. **Ultraviolet**: FUV diagnostic spectroscopy (with *HST*/COS), FUV and NUV imaging (*HST*/ACS SBC and STIS). **Optical**: Extensive experience with space- and ground-based imaging data (especially *HST*), photometry, observational techniques, optical spectroscopy (e.g., XSHOOTER, UVES), integral field spectroscopy (e.g., SINFONI, GMOS, OSIRIS). **Mid/Far-infrared** *Spitzer* MIPS and IRAC photometry, *Herschel* PACS spatially resolved spectroscopy. **Sub-mm & Radio** Quantitative analysis of ALMA data in CASA, analysis of Very Large Array Radio data.

Service & Memberships

Space Mission Development	**Deputy Lead for SAO | *Lynx X-ray Observatory* NASA Strategic Mission Study** **Head of the *Lynx* Science Support Office** Core Member of the *Lynx* Study Office **Creator / web designer** and curator of `www.lynxobservatory.org` *Lynx* Graphic Design Lead (portfolio at `www.behance.net/granttremblay`) Member of the Communication, 'Feedback', and 'Synergy' Working Groups **Core Science Team** | *Europa X-ray Instrument for Life Exploration* (EXILE) An X-ray Silicon Drift Detector for the notional Europa Lander Mission

Committee Service

XRSIG co-chair, NASA PhysPAG Executive Committee (2019 *to present*)
Member, NASA Great Observatories Science Advisory Group (2018 *to* 2019)
AAS Agent for Yale University (`http://aas.org/agents/`)
Very Large Telescope / Unit Telescope 2 (Kueyen) SciOps Team
Fellow Contact, ESO Directorate for Science (2012 *to* 2014)
ESO Observing Programmes Committee, Periods 93, 91, 90, 89 (*Scientific Assistant*)
ESO User's Committee 2013 Meeting (*Fellow Assistant*)
ESO Scientific & Technical Committee 2011 Meeting (*Fellow Assistant*)
International Search Committee, Dean of the College of Science for RIT (2011)
Society of Physics Students Exec. Committee, University of Rochester (2004 *to* 2006)

Colloquia Series Created

Founder & Organizer, *"The AGN Club"*
2011 *to present*, ESO & MPA/MPE
Highly popular regular meeting of the local AGN community, the first of its kind.

Founder & Organizer, *"Extragalactic Lunch"*
2007 *to* 2008, Space Telescope Science Institute

Meetings Organized

"The Second Kathmandu Astrophysics School", Pokhara, Nepal, June 2018 (SOC)
"ALMA Community Days 2017", New Haven, CT USA, April 2017 (**Co-creator**)
"SciCoder 2016", New Haven, CT USA, August 2016 (LOC)
"Large Scale Clustering of Active Galactic Nuclei", Garching, July 2014 (LOC)
"AGN 101: A Review of the Field", Garching, May 2013 (**Co-creator /** SOC)
"Shaping E-ELT Science and Instrumentation, Ismaning, Germany, Feb 2013 (LOC)
"Islands in the Cosmos", Garching, Nov. 2012 (**Co-creator /** SOC)
"ESO@50: The First Fifty Years of ESO", Garching, Sept. 2012 (LOC)
"Star Formation Across the Universe", Garching, Dec. 2011 (**Co-creator /** SOC)

Other Colloquia Organized

Yale Center for Astronomy & Astrophysics Seminar, 2015 *to* 2016
Yale Astronomy Colloquium, 2014 *to* 2015
The ESO Journal Club, 2011 *to* 2014
Various ESO Talks, 2011 *to* 2014
The RIT Astronomy Journal Club, 2008 *to* 2010
RIT Astronomy Lunch Talks, 2008 *to* 2010

Referee for

Nature
The Astrophysical Journal
Monthly Notices of the Royal Astronomical Society
Astronomy & Astrophysics
ESO Director's Discretionary Time Proposals (*technical assessment*)
NASA Postdoctoral Program (NPP) Proposals
Harvard University Senior Theses

Proposal Review Panel Service

NASA 2020 E.7 *Support for Open Source Tools* Review Panel (2021)
James Webb Space Telescope Cycle 1 Time Allocation Committee (2021)
Center for Astrophysics Internal Time Allocation Commieee, 2019 *to present*
Chair, *Chandra* Cool Attitude Targets (CAT) Extragalactic Committee, 2018
Hubble Space Telescope Cycle 25 Time Allocation Committee, 2017
ALMA Strategic Studies Development Program, 2017
ALMA Cycle 4, 5, and 6 Proposal Review Committee, 2016-2019
Chandra Cycle 17 Time Allocation Committee, 2015
NASA Earth & Space Science Fellowship Review Committee, 2015
NASA Astrophysics Data Analysis Program Review Committee, 2015 & 2016
Yale Time Allocation Committee, 2016A, 2016B, & 2017A

Society Memberships

American Astronomical Society | Full Member & AAS Agent for Yale University
Royal Astronomical Society | Fellow
International Astronomical Union | Full Member

Press & Public Outreach

Press Releases on First-Author Papers

November 2018 | "***ALMA and MUSE Detect Galactic Fountain***"
Press releases from **NASA/***Chandra*, **ESO**, **NRAO/ALMA**, **Yale** (and others) on Tremblay *et al.* 2018, including an "ESOCast" video. The release was picked up by more than thirty Print and Web news outlets in multiple languages including *CNN, Space.com, SyFy Wire*, etc.

June 2016 | "***Black Hole Deluged by Cold Intergalactic Rain***"
Press releases from **Nature**, **NRAO/ALMA**, **ESO**, **Yale**, **MIT** (and others) on Tremblay *et al.* 2016, *Nature*. Picked up by over three hundred Print and Web news outlets in over fifteen languages, including *The New York Times*, the *BBC*, *The Washington Post*, *TIME*, *Astronomy*, *Popular Science*, *Wired*, and *Discover* Magazines, as well as many others. The paper has an Altmetric score in the 99th percentile of all tracked papers, and in the 93rd percentile of all similarly aged *Nature* papers.

August 2015 | "***Galaxy Star Birth Regulated by Black Hole Fountain***"
Press releases from **NASA/STScI**, **ESA**, & **Yale University** on Tremblay *et al.* 2015. Picked up by over fifty Print and Web news outlets in over ten languages including *IFL Science*, *Astronomy Magazine*, & *Russia Today*.

July 2014 | "***Hubble Sees Bridge of Young Stars Between Two Ancient Galaxies***"
Press releases from **NASA/STScI**, **ESA**, & **Hubble Heritage** on Tremblay *et al.* 2014 including a "Hubblecast" video (Hubblecast # 76) and "Hubble Hangout" webcast. Release was picked up by over fifty Print and Web news outlets in over ten languages including *NBC News*, *The Huffington Post*, *Astronomy Picture of the Day*, *Discover* & *Astronomy* Magazines, *Space.com*, *la Republica*, *El Mercurio*, *Kronen Zeitung*, etc.

Education & Public Outreach (Highlights)

Discovery Channel Documentary Series | *"How the Universe Works"*
A highly popular general public documentary series.
Prime cast member on seasons 6, 7, and 8

Science Channel Documentary Series | *"Space's Deepest Secrets"*
Prime cast member for Seasons 3, 4, 5
Season 2, Episode 5 includes segment about results from Tremblay et al. 2016, *Nature*

BBC Documentary Series | *"The Universe"*
Prime cast member for the Premiere Season

Space on the Hill, Lead Organizer (2020 *to present*
An outreach program for members of the U.S. Senate and House of Representatives (and their staffers), held every other month in the House Science Committee's room.
Co-sponsored by the Smithsonian and the American Astronomical Society.

Astronomy On Tap, Lead Organizer (Connecticut chapter)
Highly popular monthly outreach event at a local pub, now in 12 cities worldwide
`http://astronomyontap.org/` | `http://www.facebook.com/AstronomyOnTap/`

Awesome Con 2017 | Official Guest
Moderated a Q&A on Space and Time with David Tennant (Dr. Who) before a live audience of 5,000 people | `http://awesome-con.com/guests/`

Profiled by **BBC *Sky at Night* Magazine**
November 2015 Issue, `http://www.skyatnightmagazine.com/`

Presentation to Senior European Union Officials, representing ESO, on Very Large Telescope operations. Audience included the President of the European Commission (J. Barroso), the Prime Minister of Sweden (C. Bildt), and the E.U. High Representative for Foreign Affairs (C. Ashton)

Education & Public Outreach (other / selected)

- Public talk for 300 middle school students in Belfast, Maine
- Hosted *White House Astronomy Night* Satellite Event, New Haven, 2015
- Several events for Leitner Family Observatory & Planetarium, New Haven
- ESO Outreach Ambassador, 2011 *to* 2014
- *"Ask an Astronomer"*, ESO Open House Day, Garching, 2013
- ALMA outreach media event at high site (ALMA AOS, 2013)
- Diplomatic outreach with Foreign Dignitaries (ESO 50th Anniversary Gala, 2012)
- *"Letters from the Edge of the Universe"*, ESO Open House Day, Garching, 2011
- Girl Scout Astronomy Nights & Family Science Nights, RIT, 2008 *to* 2011
- Co-organized multiple "open telescope" nights at RIT Observatory, 2008 *to* 2011
- Johns Hopkins Dept. of Physics & Astro. Annual Physics Fair, 2007
- *"Big Explosions & Strong Gravity"*, NASA Goddard Space Flight Center, 2008
- *"Ask a Scientist"* at NASA's *JWST* Exhibit, National Mall, Washington D.C. (2007)
- Mees Observatory Tour Guide, 2005 *to* 2006
- Chair, American Phys. Society Educational Outreach Committee, Rochester, 2005

Talks & Colloquia

Invited Talks & Reviews

- *Invited Departmental Colloquia*: Dartmouth | Harvard CfA | UMass Amherst | U. Michigan | RIT | U. Alabama | Wesleyan | Yale | UMBC | STScI | ASTRON etc.
- *"Cold, Galaxy-scale Fountains with Black Hole Pumps"*
  Meeting of the Canadian Astronomical Society (CASCA), Winnipeg, Canada, 2016
- *"A Galaxy-Scale Fountain of Cold Molecular Gas Pumped by a Black Hole"*
  Sweeping Galaxies Clean with Molecular Outflows, Sesto, Italy, 2016
- *"The Cold Phase of Mechanical AGN Feedback"*
  Snowcluster 2015: The Physics of Galaxy Clusters, Snowbird, Utah, 2015
- *"Galaxy Growth from the Collapse of Hot Atmospheres"*
  Islands in the Cosmos: Views of Galaxy Formation, Garching, Germany, 2013
- *"Kinetic and Radiative Feedback from Active Galaxies"*
  "AGN 101": A Review of the Field, Garching, Germany, 2013
- *"Star Formation amid Mechanical AGN Feedback in Brightest Cluster Galaxies"*
  Astronomical Society of New York Spring Meeting, Rochester, NY, USA, 2011
- ASNY Research Prize Talk: *"The Warped Nuclear Disk of Radio Galaxy 3C 449"*
  Astronomical Society of New York Fall Meeting, Troy, NY, USA, 2006

Contributed Talks (*selected*)

- *"A Galaxy-Scale Fountain of Cold Molecular Gas Pumped by a Black Hole"*
  Extragalactic Relativistic Jets: Cause & Effect, Bangalore, India, 2015
- *"A Galaxy-Scale Fountain of Cold Molecular Gas Pumped by a Black Hole"*
  Revolution in Astronomy with ALMA: The Third Year, Tokyo, Japan, 2014
- *"Ballistic Molecular Rain powers Cold Black Hole Feedback"*
  IAUS 313, Extragalactic Jets at Every Angle, Puerto Ayora, Galápagos, 2014
- *"ALMA views on Star Formation and AGN Feedback in Radio Loud AGN"*
  IAUS 304, Multiwavelength AGN Surveys & Studies, Yerevan, Armenia, 2013
- *"Cool Core Clusters can Actually Cool"*
  Tracing Cosmic Evolution with Clusters of Galaxies, Sesto, Italy, 2013
- *"Star Formation, Feedback, and Cold Molecular Gas in BCGs"*
  Feeding, Feedback, & Fireworks (Southern Cross), Hamilton Island, Australia, 2013
- *"Morphology of Star Forming Filaments in Elliptical Galaxies"*
  ESO Science Day, Garching, Germany, 2013
- *"Unique Multiphase Signatures of AGN Feedback in Abell 2597"*
  IAU General Assembly XXVIII, Beijing, China, 2012
- *"Abell 2597: An Archaeological Expedition"*
  Herschel Cool Core Clusters Key Project Meeting, Paris, France, 2010
- *"Episodic Star Formation coupled to Reignition of Radio Activity in 3C 236"*
  Powerful Radio Galaxies: Triggering & Feedback, Leiden, The Netherlands, 2009

Other Presentations

Many formal and informal talks (30+) at various institutes
Various Contributed Posters (four AAS meetings, two AGN feedback meetings, etc.)
Invited talks to data reduction tutorials (X-ray, optical data, etc.)

Other Information

Biographical Information

Citizenship: United States of America
Spoken Languages: English (native), near-fluent Spanish, basic German

References

Prof. C. Megan Urry, meg.urry@yale.edu
Israel Munson Professor of Physics and Astronomy, Yale University
Director, Yale Center for Astronomy and Astrophysics
President, American Astronomical Society

Dr. Alexey Vikhlinin, avikhlinin@cfa.harvard.edu
Senior Astrophysicist, Associate Director, and *Lynx* Community Co-Chair
Smithsonian Astrophysical Observatory

Dr. Ralph Kraft, rkraft@cfa.harvard.edu
Senior Astrophysicist and *Chandra*/HRC Instrument P.I.
Smithsonian Astrophysical Observatory

Prof. Stefi A. Baum, baum@cis.rit.edu
Director, Center for Imaging Science, Rochester Institute of Technology
Dean of Science, University of Manitoba

Prof. Christopher P. O'Dea, odea@cis.rit.edu
Professor, School of Physics & Astronomy, Rochester Institute of Technology

Prof. Dr. Françoise Combes, francoise.combes@obspm.fr
Astronome à l'Observatoire de Paris

Prof. Dr. Eric Emsellem, eemselle@eso.org
Head of the Office for Science, European Southern Observatory

Prof. Alice C. Quillen, aquillen@pas.rochester.edu
Professor, Department of Physics & Astronomy, University of Rochester

Dr. William B. Sparks, sparks@stsci.edu
SETI Institute & Space Telescope Science Institute

Science Impact Reviewers

The following people submitted letters in support of my recent promotion at the Smithsonian Astrophysical Observatory: Prof. Feryal Özel, Prof. Megan Donahue, Prof. Mark Voit, Prof. Brian McNamara, and Prof. Andy Fabian.

Refereed Publications

Seventy-seven publications, fifteen as first author, including in Nature. *Papers in preparation are not listed. Solid and dashed underlines mark graduate and undergraduate authors under my supervision, respectively.*

Highlighted papers (*i.e., first author papers or works on which I was significantly involved at all stages*)

1. Li, Y., Gendron-Marsolais, M., Zhuravleva, I, Xu, S., Simionescu, A, **Tremblay, G. R.**, Lochhaas, C., Bryan, G., Quataert, E., Murray, N., Boselli, A., Hlavacek-Larrondo, J., Zheng, Y., Fossati, M., Miao, L., Emsellem, E., Sarzi, M., & Arzamasskiy, L., *"Direct Detection of Black Hole-Driven Turbulencce in the Centers of Galaxy Clusters"*, **ApJ**, 889, 1 (2020)

2. Vaddi, S., **Tremblay, G. R.**, O'Dea, C. P., Chakravorty, S., Kharb, P., Baum, S. A., McDonald, M., & Donahue, M., *"HST/COS Spectroscopy of Cooling Flow Filaments in Abell 2597 and Zw3146"*, submitted to **ApJ** (2020)

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Major Community Reports

1. ***Lynx X-ray Observatory*** **Concept Study Report**
   Available at `www.lynxobservatory.org/report`, released August 2019
   Significant involvement at all levels, including editorial control over the Science Section, writing many pages of text, and creating the large majority of science figures throughout the report

2. **Great Observatories: The Past and Future of Panchromatic Astrophysics**
   Available at `www.greatobservatories.org`, released January 2020
   Consensus report of the NASA Great Observatories Science Analysis Group (SAG-10)
   Significant involvement across several sections of the report, including on major figures.

ASTRO2020 SCIENCE WHITEPAPERS

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2. Civano, F. et al., *"Cosmic evolution of supermassive black holes: A view into the next two decades"*, **BAAS**, 51, 429 (2019)
3. Voit, M. et al., *"Circumgalactic Gas and the Precipitation Limit"*, **BAAS**, 51, 405 (2019)
4. Peeples, M. et al., *"Understanding the circumgalactic medium is critical for understanding galaxy evolution"*, **BAAS**, 51, 386 (2019)
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BOOKS FOR THE GENERAL PUBLIC

1. Arcand, K., **Tremblay, G. R.**, Watzke, M., Weisskopf, M., & Wilkes, B., *Light from the Void: Twenty Years of Discovery with NASA's Chandra X-ray Observatory*, a coffee table book celebrating *Chandra*'s twentieth launch anniversary from Smithsonian Books (*released October 22, 2019*)
2. **Tremblay, G. R.** & Coppens, K., *What do Black Holes Eat for Dinner?*, a children's book from Tumblehome Learning (*realeased July 9, 2020*)

Journal abbreviations used

A&A | *Astronomy & Astrophysics*
AN | *Astronomische Nachrichten*
ApJ | *The Astrophysical Journal*
ApJL | *The Astrophysical Journal Letters*
ApJS | *The Astrophysical Journal Supplement*
BAAS | *Bulletin of the American Astronomical Society*
MNRAS | *Monthly Notices of the Royal Astronomical Society*
JGR | *Journal of Geophysical Research*

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