Thomas Connor

thomasconnor.org
thomas.p.connor@jpl.nasa.gov | +1 626-395-2516

4800 Oak Grove Dr., M/S 169-327, Pasadena, CA, USA 91109

CURRENT POSITION

NASA JET PROPULSION LABORATORY | NPP Fellow
Oct 2019 – Present | Pasadena, CA

PREVIOUS POSITIONS

CARNEGIE OBSERVATORIES | Postdoctoral Fellow
Sept 2016 – Sept 2019 | Pasadena, CA

EDUCATION

PHD | Michigan State University
2013 – 2016 | Michigan, USA
Dissertation: Multi-wavelength observations of galaxy clusters: Population evolution and scaling relations for intermediate-redshift clusters
Advisor: Megan Donahue

MS | Michigan State University
2011 – 2013 | Michigan, USA
Advisor: Megan Donahue

BS | Case Western Reserve University
2007 – 2011 | Ohio, USA
Major in Astronomy with Minors in Physics and Classics. Graduated cum laude
Senior Thesis Supervisor: J. Chris Mihos

RESEARCH

PRIMARY INTERESTS

Galaxies in Galaxy Clusters, particularly Brightest Cluster Galaxies
The Intersection of the Cosmic Web and Galaxy Clusters
Star Formation near AGN in Massive Galaxies
The Earliest Quasars

TECHNIQUES

Synergies from Multi-Wavelength Analysis
Multi-Object Spectroscopy
Precision Photometry

HONORS & AWARDS

GRANTS & FELLOWSHIPS

Hubble Space Telescope (HST) Cycle 25 (2017)
UV Observation of a QSO Sightline Intersecting an X-ray Identified Filament of the Cosmic Web
GO Program 15198, P.I.: T. Connor, allocated 5 Orbits and $61,543 USD

Dissertation Completion Fellowship (2016)
Michigan State University College of Natural Science
Awarded to T. Connor. Allocated $6,000 USD

Physics Fellowship (2016)
Michigan State University Department of Physics & Astronomy
Awarded to T. Connor. Allocated $1,702 USD

AWARDS

NASA NPP Fellowship (2019-)

Kaplan Award (2016)
Awarded for the best presentation of the year at the MSU Physics Grad Organization lunch talks

Best Graduate TA Award (2012)
Awarded for the best graduate teaching assistant of the year in the MSU Department of Physics and Astronomy

Peter Witt Scholarship (2009)
CWRU scholarship honoring students who have shown a dedication to community involvement

Case Alumni Association Scholarship (2009)
Awarded to CWRU students majoring in STEM based on merit, need, and skills

VOLUNTEER & LEADERSHIP

COMMITTEES & ORGANIZATIONS

Carnegie Institution Postdoctoral Association | Representative (2017 - 2019)

PGO Inclusivity Task Force | Founding Member (2016)

AAS Early Career Advisory Board | Founding Member (2015 - Dissolution)

SERVICE

NASA ADAP Panel Reviewer

NuSTAR Time Allocation Committee

Gemini FT Proposal Reviewer

Hubble Space Telescope Proposal Reviewer (2017, 2018)

Chambliss Award Judge – AAS Meeting (2016, 2019)

Graduate Student Mentor (2012 - 2015)

REU Graduate Mentor (2013)

TEACHING EXPERIENCE

Guest Instructor | Michigan State University (2015)
AST 308: Galaxies & Cosmology

Instructor | MST@MSU Camp (2013)

Instructor | Michigan State University (2011-2013)
ISP 205L: Visions of the Universe Lab

Teaching Assistant | Case Western Reserve University (2009 - 2011)
ASTR 201: Stars and Planets
ASTR 202: Galaxies and the Universe
ASTR 204: Einstein's Universe
ASTR 206: Life in the Universe

OBSERVING EXPERIENCE

FACILITIES OPERATED

Magellan Telescopes (6.5 m)
IMACS, IMACS-GISMO, LDSS3, MagE, FIRE, FourStar

Hale Telescope (5.1 m)
Triplespec, WIRC

SOAR Telescope (4.1 m)
Goodman, SOI, Spartan

Irénée du Pont Telescope (2.5 m)
Direct CCD, Echelle, WFCCD

CWRU Burrell-Schmidt Telescope (0.61 m)

DATA REDUCED & ANALYZED

Hubble Space Telescope

WFC3, ACS: Imaging Data

Chandra X-ray Observatory
ACIS: Quasar spectra

XMM-Newton
EPIC: Galaxy Clusters

Magellan Telescopes
IMACS, IMACS-GISMO, LDSS3

Keck Telescopes
MOSFIRE

Gemini Telescopes
GMOS

SOAR Telescope (4.1 m)
Goodman, SOI

Irénée du Pont Telescope (2.5 m)
Direct CCD

PUBLICATIONS

PRIMARY PUBLICATIONS First or Second Author

11 Total

1. Connor, Thomas; Eduardo Bañados, Chiara Mazzucchelli, Daniel Stern, Roberto Decarli, Xiaohui Fan, Emanuele Paolo Farina, Elisabeta Lusso, Marcel Neeleman, Fabian Walter.
"X-ray Observations of a [C II]-bright, z=6.59 Quasar/Companion System." 2020, ApJ, 900, 189

2. Connor, Thomas; Eduardo Bañados, Daniel Stern, Roberto Decarli, Jan-Torge Schindler, Xiaohui Fan, Emanuele Paolo Farina, Chiara Mazzucchelli, John S. Mulchaey, Fabian Walter.
"X-ray Observations of a z $\sim$ 6.2 Quasar/Galaxy Merger." 2019d, ApJ, 887, 171

3. Connor, Thomas; Fakhri S. Zahedy, Hsiao-Wen Chen, Thomas J. Cooper, John Mulchaey, Alexey Vikhlinin.
"COS Observations of the Cosmic Web: A Search for the Cooler Components of a Hot, X-ray Identified Filament." 2019c, ApJL, 884, 20

4. Connor, Thomas; Kelson, Daniel D.; Blanc, Guillermo A.; Boutsia, Konstantina.
"Assembling a RELIC at Redshift 1: Spectroscopic Observations of Galaxies in the RELICS Cluster SPT-CLJ0615−5746." 2019b, ApJ, 878, 66

5. Connor, Thomas; Kelson, Daniel D.; Donahue, Megan; Moustakas, John.
"On the Origin of the Scatter in the Red Sequence: An Analysis of Four CLASH Clusters." 2019a, ApJ, 875, 16

6. Connor, Thomas; Kelson, Daniel D.; Mulchaey, John; Vikhlinin, Alexey; Patel, Shannon G.; Balogh, Michael L.; Joshi, Gandhali; Kraft, Ralph; Nagai, Daisuke; & Starikova, Svetlana.
"Wide-Field Optical Spectroscopy of Abell 133: A Search for Filaments Reported in X-ray Observations." 2018, ApJ, 867, 25

7. Bañados, Eduardo; Connor, Thomas; Stern, Daniel; Mulchaey, John; Fan, Xiaohui; Decarli, Roberto; Farina, Emanuele P.; Mazzucchelli, Chiara; Venemans, Bram P.; Walter, Fabian; Wang, Feige; & Yang, Jinyi
"Chandra X-Rays from the Redshift 7.54 Quasar ULAS J1342+0928." 2018, ApJL, 856, 25

8. Connor, Thomas; Donahue, Megan; Kelson, Daniel D.; Moustakas, John; Coe, Dan; Postman, Marc; Bradley, Larry D.; Koekemoer, Anton M.; Melchior, Peter; Umetsu, Keiichi; & Voit, G. Mark
"Crowded Field Galaxy Photometry: Precision Colors in the CLASH Clusters." 2017, ApJ, 848, 37

9. Donahue, M; Connor, Thomas; Voit, G. Mark; & Postman, Marc
"Observations of Lyα and O VI: Signatures of Cooling and Star Formation in a Massive Central Cluster Galaxy." 2017, ApJ, 835, 216

10. Donahue, M; Connor, Thomas; Fogarty, Kevin; Li, Yuan; Voit, G. Mark; Postman, Marc; Koekemoer, Anton; Moustakas, John; Bradley, Larry; & Ford, Holland
"Ultraviolet Morphology and Unobscured UV Star Formation Rates of CLASH Brightest Cluster Galaxies." 2015, ApJ, 805, 177

11. Connor, Thomas; Donahue, Megan; Sun, Ming; Hoekstra, Henk; Mahdavi, Andisheh; Conselice, Christopher J.;& McNamara, Brian
"Scaling Relations and X-Ray Properties of Moderate-luminosity Galaxy Clusters from $0.3 < z < 0.6$ with XMM-Newton." 2014, ApJ, 794, 48

SECONDARY PAPERS Co-authored papers, published

19 Total

12. Dicker, S.R. et al. (Connor, T: 9/20)
"The Massive and Distant Clusters of WISE Survey. X. Initial Results from a Sunyaev-Zeldovich Effect Study of Massive Galaxy Clusters at z > 1 Using MUSTANG2 on the GBT." 2020, ApJ, 902, 144

13. Frisbie, R.L.S. et al. (Connor, T: 4/9)
"Properties of the Hot Ambient Medium of Early-type Galaxies Hosting Powerful Radio Sources." 2020, ApJ, 899, 159

14. Holoien, T. et al. (Connor, T: 18/33)
"The Rise and Fall of ASASSN-18pg: Following a TDE from Early to Late Times." 2020, ApJ, 898, 161

15. Moravec, E. et al. (Connor, T: 7/21)
"The Massive and Distant Clusters of WISE Survey. IX. High Radio Activity in a Merging Cluster." 2020, ApJ, 898, 145

16. Steinhardt, C.L. et al. (Connor, T: 35/95)
"The BUFFALO HST Survey." 2020, ApJS, 247, 64

17. Gonzalez, E.J. et al. (Connor, T: 11/14)
"Setting the scene for BUFFALO: a study of the matter distribution in the HFF galaxy cluster MACS J0416.1-2403 and its parallel field." 2020, MNRAS, 494, 349

18. Starikova, S. et al (Connor, T: 5/7)
"Stellar-mass Measurements in A133 with Magellan/IMACS ." 2020, ApJ, 892, 34

19. Chen, P., et al. (Connor, T: 17/24)
"The Most Rapidly-Declining Type I Supernova 2019bkc/ATLAS19dqr." 2020, ApJL, 889, L6

20. DeMaio, T., et al. (Connor, T: 7/12)
"The growth of brightest cluster galaxies and intracluster light over the past 10 billion years." 2020, MNRAS, 491, 3751

21. Johnson, S.D., et al. (Connor, T: 5/14)
"The Physical Origins of the Identified and Still Missing Components of the Warm-Hot Intergalactic Medium: Insights from Deep Surveys in the Field of Blazar 1ES1553+113." 2019, ApJL, 884, L31

22. Holoien, T.W.S., et al. (Connor, T: 19/24)
"Discovery and Early Evolution of ASASSN-19bt, the First TDE Detected by TESS." 2019, ApJ, 883, 111

23. Grossova, R., et al. (Connor, T: 11/16)
"Powerful AGN jets and unbalanced cooling in the hot atmosphere of IC 4296." 2019, MNRAS, 488, 1917

24. Husemann, B., et al. (Connor, T: 11/18)
"The Close AGN Reference Survey (CARS). A massive multi-phase outflow impacting the edge-on galaxy HE1353-1917." 2019, A&A, 627, 53

25. Juráňová, A., et al. (Connor, T: 11/12)
"Cooling in the X-ray halo of the rotating, massive early-type galaxy NGC 7049." 2019, MNRAS, 484, 2886

26. Lakhchaura, K., et al. (Connor, T: 7/9)
"Thermodynamic properties, multiphase gas and AGN feedback in a large sample of giant ellipticals." 2018, MNRAS, 481, 4472

27. DeMaio, T., et al. (Connor, T: 5/7)
"Lost but not forgotten: intracluster light in galaxy groups and clusters." 2018, MNRAS, 474, 3009

28. Morrison, H.L., et al. (Connor, T: 5/13)
"Globular and Open Clusters Observed by SDSS/SEGUE: The Giant Stars." 2016, AJ, 151, 7

29. Fogarty, K., et al. (Connor, T: 3/5)
"Star Formation Activity in CLASH Brightest Cluster Galaxies." 2015, ApJ, 813, 117

30. Werner, N., et al. (Connor, T: 9/15)
"The origin of cold gas in giant elliptical galaxies and its role in fuelling radio-mode AGN feedback." 2014, MNRAS, 439, 2291

OUTREACH HIGHLIGHTS

Mt. Wilson STEM Program (2018 - Present)
Taught middle and high school students at Mt. Wilson Observatory

Carnegie Observatories Open House (2016 - Present)
Planned, organized, and ran spectroscopy activity at yearly open house

Astronomy on Tap – Lansing (2015-2016)
Gave public talk, coordinated social media during events

Public Nights - MSU Campus Observatory (2011-2014)
Operated telescopes and engaged with members of the public

Science Olympiad – CWRU (2010 - 2011) and MSU (2012)
Wrote, proctored, and graded exams

Very Large Array tour guide (2010)
Gave tours of the Very Large Array facilities to visitors

TELESCOPE ALLOTMENT

Hubble Space Telescope
PI: #15198 – 5 orbits with the Cosmic Origins Spectrograph (2017)
Co-I: #15308 – 6 orbits with ACS / WFC3 (2017)

Chandra X-ray Observatory
Co-I: #20700106 – 277 ks to study a radio-bright quasar (2018)
Co-I: #21700027 – 120 ks to study an obscured quasar (2019)
Co-I: #22800459 – 271 ks to study a high-redshift galaxy clusters (2020)
Co-I: #22700552 – 710 ks to survey quasars in the epoch of reionization (2020)

XMM-Newton Observatory
Co-I: #084274 – 146 ks to study a high-z quasar companions (2018)
PI: #086378 – 186 ks to study a high-z radio-bright quasar (2019)
Co-I: # 086462 – Up to 192 ks to study strongly-lensed quasars (2019)

Magellan Telescopes
PI: 33.5 Nights Awarded (2017-2020)

Gemini Telescopes
PI: 1 hour (2020)
Co-I: 9.2 hours (2019)

NuSTAR
Co-I: #6236 – 53 ks targeting candidate subparsec SMBH binaries (2020)

JVLA
Co-I: #21A-307 – 5.00 hours to investigate the lifetime of a high-z quasar jet (2021)

Palomar Hale 200 Inch
PI: 4 Nights Awarded (2020)

Irénée du Pont Telescope
PI: 15 Nights Awarded (2017-2020)

PRESENTATIONS

TALKS

Multiwavelength Insights into the Growth and Evolution of Galaxy Clusters (October 2020)
GfA Galaxy Clusters group, Virtual

The Current Status of X-ray Observations of High-z Quasars (March 2020)
Black Holes and Galaxies at the Edge of the Universe, Ringberg Castle, Germany

X-rays from the Cosmic Web: The Case of Abell 133 (Sept 2019)
X-ray Astronomy 2019, Bologna, Italy

Observing the Cosmic Web at the Cluster Boundary (Jan 2019)
Winter AAS Meeting, Washington, USA

Building a Galaxy Cluster (Oct 2018)
University of Alabama at Huntsville Physics Seminar, Huntsville, Alabama, USA

Cosmic Filaments & AXIS (Aug 2018)
AXIS Summer Workshop, Washington, D.C., USA

Optical Observations of Cluster Filaments (June 2018)
Alabama WHIM 2018, Alabama, USA

Tying Clusters Onto the Cosmic Web with X-rays (March 2018)
SnowCluster 2018, Utah, USA

Observations of Infall into Abell 133 (December 2016)
4th Magellan Science Symposium, Washington, D.C., USA

Multi-Wavelength Observations of Galaxy Clusters: Population Evolution and Scaling Relations for Intermediate-Redshift Clusters (July 2016)
Thesis Defense, Michigan, USA

Inclusive Astronomy, Inclusive Physics: Working Toward a Better Future in our Fields (February 2016)
MSU PGO Lunch Talk, Michigan, USA

Crowded Field Photometry in the CLASH Clusters: Measuring the Red Sequence of Cluster Galaxies with Robust Photometry (January 2016)

Winter AAS Meeting, Florida, USA

Seeing the Trees for the Forest: An Optimized Census of Galaxy Clusters (September 2015)
MSU PGO Lunch Talk, Michigan, USA

A Beginner's Guide to Galaxy Clusters (October 2014)
MSU PGO Lunch Talk, Michigan, USA

Optimal Photometric Measurements for Determining the Stellar Masses of BCGs and Galaxy Clusters (September 2013)
CLASH Team Science Meeting, London, UK

POSTERS

X-ray Observations of Quasars in the First Billion Years of the Universe: Searching for AGN Activity in Companions (January 2020)
AAS Winter Meeting, Honolulu, Italy

Taking the Red Sequence Offline (July 2019)
Tracing Cosmic Evolution With Clusters of Galaxies 2019, Sexten, Italy

Photometry of CLASH Cluster Galaxies (March 2015)
SnowCluster 2015, Utah, USA

Optical Morphology of Faint Radio Sources in the GOODS-N Field (January 2011)
AAS Winter Meeting, Washington, USA

OTHER INFORMATION

CITIZENSHIP: United States of America

LANGUAGES

English: Native
Spanish: Basic

PROFESSIONAL MEMBERSHIPS

American Astronomical Society | Full Member
High Energy Astrophysics Division, American Astronomical Society | Member

REFERENCES

Dr. Daniel Stern
NuSTAR Project Scientist
Senior Research Scientist, Jet Propulsion Laboratory / California Institute of Technology

Dr. John Mulchaey
Crawford H. Greenewalt Chair and Director of The Observatories of the Carnegie Institution for Science

Prof. Megan Donahue
University Distinguished Professor, Michigan State University
Past President, American Astronomical Society

Dr. Daniel D. Kelson
Staff Associate, The Observatories of the Carnegie Institution for Science