

Jonathan Cohn

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RESEARCH INTERESTS

Supermassive black holes • black hole–host galaxy correlations • gas- and stellar-dynamical modeling of galaxies • sub-millimeter/radio astronomy • black hole growth and evolution • galaxy formation and evolution • kinematics of nuclear gas disks • quiescent galaxies • relic galaxies • massive galaxies • starbursting galaxies • extreme emission-line galaxies • SED fitting • star formation histories • gravitational microlensing

EDUCATION

Ph.D., Astronomy May 2022 (expected)
Advisor: Dr. Jonelle Walsh, Texas A&M University

M.S., Astronomy May 2019
Advisor: Dr. Kim-Vy Tran, Texas A&M University

B.S., Physics, *Magna Cum Laude* May 2016
Advisors: Dr. Michael Kesden & Dr. Lindsay King, The University of Texas at Dallas

RESEARCH EXPERIENCE

Research Assistant Summer 2017 & 2018, Spring 2019 – present
Department of Physics & Astronomy, Texas A&M University

Undergraduate Research Assistant Summer 2015
Department of Physics, The University of Texas at Dallas

OBSERVATION AND DATA REDUCTION EXPERIENCE

Observations at McDonald Observatory Apr 2018, Jan 2020
2.7m telescope, VIRUS-P and VIRUS-W (11 nights)

Observations at Keck Observatory Mar 2019
MOSFIRE, Keck I (2 nights)
Keck Cosmic Web Imager, Keck II (1 night)

ALMA data reduction workshop 13 – 15 Mar 2019
National Radio Astronomy Observatory, Charlottesville, VA

TEACHING EXPERIENCE

Teaching Assistant — Instructor of Record Summer 2017 – Spring 2018
Astronomy 102: Observational Astronomy
Department of Physics & Astronomy, Texas A&M University

Teaching Assistant Fall 2016 – Spring 2017, Fall 2018
Astronomy 101: Basic Astronomy
Department of Physics & Astronomy, Texas A&M University

Private Tutor
General Chemistry
College Station, Texas

Fall 2016 – Spring 2017

Undergraduate Teaching Assistant
Weather & Climate
Department of Physics, The University of Texas at Dallas

Fall 2015 – Spring 2016

Peer-led Team Learning Super Leader
PLTL Leader and Coordinator, General Chemistry I & II
Student Success Center, The University of Texas at Dallas

Fall 2015 – Spring 2016

Peer-led Team Learning Leader
PLTL Leader, General Chemistry I & II
Student Success Center, The University of Texas at Dallas

Fall 2013 – Spring 2016

PUBLICATIONS

First-Author

- *An ALMA Gas-dynamical Mass Measurement of the Supermassive Black Hole in the Local Compact Galaxy UGC 2698*
J. Cohn, J. L. Walsh, B. D. Boizelle, and 9 additional authors
The Astrophysical Journal (2021), 919, 77
- *ZFOURGE: Extreme 5007 Å emission may be a common early-lifetime phase for star-forming galaxies at $z > 2.5$*
J. Cohn, J. Leja, K-v. H. Tran, and 12 additional authors
The Astrophysical Journal (2018), 869, 141

Co-Author

- *Gas inows in the polar ring of NGC 4111: the birth of an AGN*
G. R. H. Roier, T. Storchi-Bergmann, R. M. McDermid, J. L. Walsh, J. Tan, **J. Cohn**, and 11 additional authors
Submitted to Monthly Notices of the Royal Astronomical Society
- *Black Hole Mass Measurements of Radio Galaxies NGC 315 and NGC 4261 Using ALMA CO Observations*
B. D. Boizelle, J. L. Walsh, A. J. Barth, D. A. Buote, A. J. Baker, J. Darling, L. C. Ho, **J. Cohn**, K. M. Kabasares
The Astrophysical Journal (2021), 908, 19
- *MOSEL: Strong [OIII] 5007 Å Emitting Galaxies at ($3 < z < 4$) from the ZFOURGE Survey*
K-v H. Tran, B. Forrest, L.Y. Alcorn, T. Yuan, T. Nanayakkara, **J. Cohn**, and 10 additional authors
The Astrophysical Journal (2020), 898, 45
- *A giant galaxy in the young Universe with a massive ring*
T. Yuan, A. Elagali, I Labbé, G. G. Kacprzak, C. del P. Lagos, L. Y. Alcorn, **J. Cohn**, and 8 additional authors
Nature Astronomy (2020), 4, 957
- *MOSEL Survey: Tracking the Growth of Massive Galaxies at $2 < z < 4$ Using Kinematics and the IllustrisTNG Simulation*
A. Gupta, K-v. H. Tran, **J. Cohn**, and 13 additional authors
The Astrophysical Journal (2020), 893, 23
- *A Tale of Two Clusters: An Analysis of Gas-phase Metallicity and Nebular Gas Conditions in Proto-cluster Galaxies at $z \sim 2$*

L. Y. Alcorn, A. Gupta, K-V. H. Tran, G. G. Kacprzak, T. Yuan, **J. Cohn**, and 9 additional authors
The Astrophysical Journal (2019), 883, 153

- *ZFOURGE: Using Composite Spectral Energy Distributions to Characterize Galaxy Populations at $1 < z < 4$*

B. Forrest, K-v.H. Tran, A. Broussard, **J. Cohn**, and 11 additional authors
The Astrophysical Journal (2018), 863, 131

- *Detecting binarity of GW150914-like lenses in gravitational microlensing events*

D.H. Eilbott, A.H. Riley, **J.H. Cohn**, M.H. Kesden, L.J. King
Monthly Notices of the Royal Astronomical Society Letters (2017), 467 (1)

AWARDS

Mitchell Institute Education & Public Outreach (\$600) Fall 2019, (\$1,200) Fall 2020
Co-investigator, Astronomy on Tap, Texas A&M University

Office of Graduate and Professional Studies Travel Award (\$800) Fall 2019
Texas A&M University

Undergraduate Research Award (\$500) 2014 – 2015
The University of Texas at Dallas

STEM Columbia Crew Memorial Scholarship (\$1500) 2014 – 2015
Texas Space Grant Consortium

Academic Excellence Scholarship, Honors (~\$30,000/year) 2012 – 2016
The University of Texas at Dallas

CONFERENCES AND PRESENTATIONS

- Texas A&M Astronomy Symposium, College Station, TX
Talk: *Gas-dynamical mass measurement of Supermassive Black Holes in local compact galaxies* 27 Aug 2021
Talk: *Gas-dynamical mass measurement of the Supermassive Black Hole in UGC 2698* 17 Aug 2020
Talk: *Estimating the masses of supermassive black holes in compact elliptical galaxies* 23 Aug 2019
Talk: *Extreme emission may be a common early-lifetime phase for star-forming galaxies at $z > 2.5$* 24 Aug 2018
Talk: *Properties of Extreme Emission Line Galaxies in ZFOURGE from Prospector- α* 25 Aug 2017
Talk: *Detectability of GW150914-like events by gravitational microlensing* 26 Aug 2016
- Joint Nuclear and Astrophysics Seminar, Texas A&M University (Virtual) 21 May 2021
Talk: *Gas-dynamical mass measurement of the Supermassive Black Hole in UGC 2698 with ALMA*
- 237th Meeting of the American Astronomical Society (Virtual) 14 Jan 2021
Talk: *Gas-dynamical mass measurement of the Supermassive Black Hole in UGC 2698 with ALMA*
- *Supermassive Black Holes 2020* (Virtual, Universidad de Concepción, Chile) 7 – 11 Dec 2020
Talk: *Gas-dynamical mass measurement of the SMBH in UGC 2698 with ALMA*
- IAU Symposium 359: Galaxy Evolution and Feedback Across Different Environments (GALFEED), Bento Gonçalves, Rio Grande do Sul, Brazil 2 – 6 Mar 2020
Poster and flash talk: *Gas-dynamical mass of the supermassive black hole in UGC 2698*
- Frank N. Bash Symposium, The University of Texas at Austin, Austin, TX 21 – 23 Oct 2019
Poster and flash talk: *Gas-dynamical mass of the supermassive black hole in UGC 2698*

- Poster and flash talk: *Star Formation Histories of Extreme Emission Line Galaxies at $z \sim 3.5$ in the ZFOURGE Survey* 23 – 25 Oct 2017
- [Understanding emission-line galaxies for the next generation of cosmological surveys](#), 5 Sept 2018
Centro de Estudios de Física del Cosmos de Aragón, Teruel, Spain
Talk: *ZFOURGE: Extreme 5007 Å emission may be a common early-lifetime phase for star-forming galaxies at $z > 2.5$*
 - 231st Meeting of the American Astronomical Society, Washington, DC 9 Jan 2018
Talk: *Star Formation Histories of Extreme Emission Line Galaxies at $z \sim 3.5$ in the ZFOURGE Survey*
 - [Plumbing Star Formation Rates in the Age of JWST](#), College Station, TX 1 Nov 2017
Talk: *Star Formation Histories of Extreme Emission Line Galaxies at $z \sim 3.5$ in the ZFOURGE Survey*
 - Fall 2017 Joint Meeting of the Texas Section of the APS, Richardson, TX 20 Oct 2017
Talk: *Star Formation Histories of Extreme Emission Line Galaxies at $z \sim 3.5$ in the ZFOURGE Survey*
 - 2016 ZFOURGE Team meeting, Magnolia, TX 24-28 Oct 2016
Talk: *Extreme emission-line galaxy properties*
 - Fall 2015 Joint Meeting of the Texas Section of the APS, Waco, TX 30 Oct 2015
Talk: *Gravitational microlensing by binary black holes*
 - The University of Texas at Dallas Undergraduate Research Poster Competition 7 Apr 2015
Poster: *Gravitational microlensing by binary black holes*

MEMBERSHIPS

American Astronomical Society
Sigma Pi Sigma Physics Honor Society

SKILLS

Data reduction: Sub-millimeter/radio (ALMA), optical/IR imaging (*HST*)
Data & modeling: nested sampling (*dynesty*), Markov Chain Monte Carlo (*emcee*), forward modeling, high-performance computer clusters
Techniques: SED-fitting, gas-dynamical modeling, *astrodrizzle*, *GALFIT*
Fluent: python, L^AT_EX, git
Experience with: html, IDL, Bash, R, casa, SQL, iraf, SLURM and LSF batch systems, virtual machines

MENTORSHIP

[Mentoring and Advising Graduates in an Inclusive Community \(MAGIC\)](#) Fall 2019 — present
Program founder, coordinator, primary mentor, & supplementary mentor
Texas A&M University, Department of Physics & Astronomy

[Discover, Explore, and Enjoy Physics and Engineering \(DEEP\) & Physics Shows](#) Fall 2017 — Fall 2021
Astronomy Team Mentor
Design, build, and present physics, engineering, and astronomy demonstrations
Texas A&M University, Department of Physics & Astronomy

OUTREACH AND VOLUNTEER WORK

TAMU Astronomy Graduate Student Representative June 2021 – present
Attend astronomy faculty meetings and represent graduate student interests
Texas A&M University, Department of Physics & Astronomy

Warrior Scholar Project , Texas A&M University STEM Week: Astronomy In the News presenter	Summer 2021
TAMU Astronomy Graduate Handbook Creator, head writer Texas A&M University, Department of Physics & Astronomy	Spring 2021
Texas A&M Astronomy graduate student website Co-creator and head writer of website for prospective and incoming graduates	Spring 2021
Conferences for Undergraduate Women in Physics at TAMU , College Station, TX Panel moderator, poster session judge, volunteer	17 – 19 Jan 2020
Letters to a Pre-Scientist Scientist pen-pal	Fall 2018 — Spring 2020
Texas A&M Astronomy REU Programming Workshop Workshop introducing REU students to programming and astronomy data Texas A&M University, Department of Physics & Astronomy	May 2019
Astronomy on Tap BCS , Bryan, TX Chapter co-founder, host, organizer Trivia writer Panel: <i>Answering YOUR Burning Questions</i> Talk: <i>From Earth to the Stars</i> Talk: <i>Chasing the Event Horizon</i> Talk: <i>Here Be Dragons Aliens: The Unsolved Equation</i>	Apr. 2018 — present Fall 2020 — present 13 Dec. 2018, 11 Sep. 2019, 15 Jan. 2020 16. Sep. 2020 17 Jul. 2019 11 Oct. 2018
Texas A&M Physics & Engineering Festival Texas A&M University, Department of Physics & Astronomy	Apr. 2017, 2018, 2019, 2021
Camp For All , Burton, TX Astronomy Outreach	2017
Public Star Parties Texas A&M University, Department of Physics & Astronomy	Spring 2017
Dallas Arboretum, UT Dallas Society of Physics Students Earth Day The Joy of Science	Apr. 2015 Apr. 2014
UT Dallas Society of Physics Students, Secretary & Vice President The University of Texas at Dallas	Fall 2013 — Spring 2016
27th Texas Symposium on Relativistic Astrophysics , The University of Texas at Dallas Public Q&A	Dec. 2013
Alpha Phi Omega Math & Science Camp, The University of Texas at Dallas Astronomy lecturer	Oct. 2013