

Jonathan Cohn

Department of Physics and Astronomy
Dartmouth College
6127 Wilder Laboratory, Hanover, NH 03755

Website: jhcohn.github.io
ORCID: [0000-0003-1420-6037](https://orcid.org/0000-0003-1420-6037)
Email: jonathan.cohn@dartmouth.edu

RESEARCH INTERESTS

Supermassive black holes • black hole–host galaxy correlations • black hole/galaxy formation & evolution • dynamical modeling of galaxies • nuclear gas disk kinematics • dust attenuation • galaxies (quiescent, relic, massive) • sub-mm/radio astronomy • optical & infrared integral field spectroscopy

EDUCATION

Ph.D., Astronomy Advisor: Dr. Jonelle Walsh, Texas A&M University	August 2022
M.S., Astronomy Advisor: Dr. Kim-Vy Tran, Texas A&M University	May 2019
B.S., Physics, <i>Magna Cum Laude</i> Advisors: Dr. Michael Kesden & Dr. Lindsay King, The University of Texas at Dallas	May 2016

POSITIONS HELD

Guarini Dean's Postdoctoral Fellow in Physics and Astronomy Department of Physics and Astronomy, Dartmouth College	2023 – present
Postdoctoral Research Associate Department of Physics & Astronomy, Texas A&M University	2022 – 2023

OBSERVATION AND DATA REDUCTION EXPERIENCE

Observations at McDonald Observatory GCMS/VIRUS-P, 2.7m telescope (8 nights) VIRUS-W, 2.7m telescope (6 nights)	Apr 2018, Jan 2020, Feb 2023
Observations at Keck Observatory MOSFIRE, Keck I (2 nights) Keck Cosmic Web Imager, Keck II (1 night) OSIRIS, Keck I (3 half nights)	Mar 2019, Oct 2022, Dec 2022
ALMA data reduction workshop National Radio Astronomy Observatory, Charlottesville, VA	13 – 15 Mar 2019

TEACHING EXPERIENCE

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

Teaching Assistant

Astronomy 101: Basic Astronomy
Department of Physics & Astronomy, Texas A&M University

Fall 2016 – Spring 2017, Fall 2018

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

Summary (2023-05-05): [ADS search](#) • 11 refereed • 2 lead author • 101 citations • *h*-index: 7

Lead 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

- [Black Hole Mass Measurements of Early-Type Galaxies NGC 1380 and NGC 6861 Through ALMA and HST Observations and Gas-Dynamical Modeling](#)
K.M. Kabasares, A.J. Barth, D.A. Buote, and 6 additional authors (including **J. Cohn**)
The Astrophysical Journal (2022), 934, 162
- [Gas inflows in the polar ring of NGC 4111: the birth of an AGN](#)
G. R. H. Roier, T. Storchi-Bergmann, R. M. McDermid, and 14 additional authors (including **J. Cohn**)
Monthly Notices of the Royal Astronomical Society (2022), 512, 2556
- [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, and 6 additional authors (including **J. Cohn**)
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, and 13 additional authors (including **J. Cohn**)
The Astrophysical Journal (2020), 898, 45
- [A giant galaxy in the young Universe with a massive ring](#)
T. Yuan, A. Elagali, I Labbé, and 12 additional authors (including **J. Cohn**)

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, and 12 additional authors (including **J. Cohn**)
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)

AWARDED TELESCOPE TIME

NASA Keck observatory/OSIRIS 2022B, co-Investigator 3 half nights, Oct/Dec 2022
Advancing Supermassive Black Hole Measurements with OSIRIS and ALMA

McDonald Observatory/Mitchell Spectrograph, co-Investigator 4 nights, April 2018
Stellar and Gaseous Content of the Most Massive Elliptical Galaxies

FUNDING, HONORS, & AWARDS

Guarini Dean's Postdoctoral Fellowship in Physics & Astronomy 2023 – 2025
[Provost's Fellowship Program](#), Dartmouth College

College of Science Diversity Committee, Small Grants Program (\$2000) Spring 2022
PI, grant to support [Gateway to Graduate School](#), Texas A&M University

Climate & Diversity Committee, Department of Physics & Astronomy (\$1800) Spring 2022
PI, grant to support [Gateway to Graduate School](#), Texas A&M University

Mitchell Institute Education & Public Outreach (\$600) Fall 2019, (\$1,200) Fall 2020
Co-I, grant to support Astronomy on Tap, Bryan/College Station

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

Dean's List Spring 2013, Fall 2014, Spring 2014
The University of Texas at Dallas

CONFERENCES AND PRESENTATIONS

- 241st Meeting of the American Astronomical Society, Seattle, WA 11 Jan 2023
Dissertation talk: *ALMA Gas-dynamical Mass Measurements of the Supermassive Black Holes in Local Compact Galaxies*
- Physics Colloquium, The University of Texas at Dallas 19 Oct 2022
Talk: *Dynamical mass measurements of supermassive black holes in local relic galaxies*
- [UC Berkeley Astronomy Lunch Talk](#), Berkeley, CA 13 Oct 2022
Talk: *ALMA gas-dynamical mass measurements of supermassive black holes in red nugget relic galaxies*
- [NOIRLab Friday Scientific \(After\) Lunch Talks](#), Tucson, AZ 9 Sep 2022
Talk: *ALMA gas-dynamical mass measurements of supermassive black holes in red nugget relic galaxies*
- [8th Annual GMT Community Science Meeting: Black Holes at All Scales](#), Sedona, AZ 31 Aug – 2 Sep 2022
Talk: *ALMA gas-dynamical mass measurements of supermassive black holes in red nugget relic galaxies*
- Texas A&M Astronomy Symposium, College Station, TX
 - Talk: *Molecular gas-dynamical mass measurements of supermassive black holes in local compact galaxies* 18 Aug 2022
 - 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)
 - Talk: *ALMA gas-dynamical mass measurements of supermassive black holes in red nugget relic galaxies* 30 Sep 2022
 - Talk: *Gas-dynamical mass measurement of the Supermassive Black Hole in UGC 2698 with ALMA* 21 May 2021
- 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
 - Poster and flash talk: *Gas-dynamical mass of the supermassive black hole in UGC 2698* 21 – 23 Oct 2019
 - 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](#), Centro de Estudios de Física del Cosmos de Aragón, Teruel, Spain 5 Sept 2018
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/WFC3*), integral field spectroscopy (Gemini/NIFS)
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

[Intent to Impact, Movement Consulting](#) Fall 2022
Completed academic mentoring course for supporting mentees of marginalized backgrounds

Postdoc-Graduate Student Mentoring Program, Texas A&M University 2022 — 2023
Program coordinator, mentor of 3 graduate students

[Mentoring and Advising Graduates in an Inclusive Community \(MAGIC\)](#) Fall 2019 — 2022
Program founder, coordinator, mentor of 3 graduate students
Texas A&M University, Department of Physics & Astronomy

[Discover, Explore, and Enjoy Physics and Engineering \(DEEP\)](#) 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 SERVICE

Gateway to Graduate School at Texas A&M University Open house for undergraduates from historically-excluded backgrounds in astronomy Program founder and coordinator	12 Nov 2022
TAMU Astronomy Graduate Student Representative Attend astronomy faculty meetings and represent graduate student interests Texas A&M University, Department of Physics & Astronomy	June 2021 – Aug 2022
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>The Past and Future of Space Exploration</i> Talk: <i>Supermassive Black Holes: Galactic Monsters and their Lairs</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 — Jun. 2023 Fall 2020 — Jan. 2021 13 Dec 2018, 11 Sep 2019, 15 Jan 2020, 23 Nov 2022 24 May 2023 23 March 2022 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
DEEP Physics Shows Texas A&M University, Department of Physics & Astronomy	2017 — 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	Apr. 2015

The Joy of Science	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