

## Jonathan Cohn

Texas A&M University, Department of Physics & Astronomy  
College Station, TX 77843-4242

**Website:** [jhcohn.github.io](https://jhcohn.github.io)  
**Email:** joncohn@tamu.edu

### 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

- *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 Co-investigator, Astronomy on Tap, Texas A&M University	(\$600) Fall 2019, (\$1,200) Fall 2020
Office of Graduate and Professional Studies Travel Award Texas A&M University	(\$800) Fall 2019
Undergraduate Research Award The University of Texas at Dallas	(\$500) 2014 – 2015
STEM Columbia Crew Memorial Scholarship Texas Space Grant Consortium	(\$1500) 2014 – 2015
Academic Excellence Scholarship, Honors The University of Texas at Dallas	2012 – 2016

## 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- $\alpha$*  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*
- 237<sup>th</sup> 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  $z > 2.5$*

- 231<sup>st</sup> 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<sup>A</sup>T<sub>E</sub>X, 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 Summer 2021  
STEM Week: Astronomy In the News presenter

TAMU Astronomy Graduate Handbook Creator, head writer Texas A&M University, Department of Physics & Astronomy	Spring 2021
<a href="#">Texas A&amp;M Astronomy graduate student website</a> Co-creator and head writer of website for prospective and incoming graduates	Spring 2021
<a href="#">Conferences for Undergraduate Women in Physics at TAMU</a> , College Station, TX Panel moderator, poster session judge, volunteer	17 – 19 Jan 2020
<a href="#">Letters to a Pre-Scientist</a> 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
<a href="#">Astronomy on Tap BCS</a> , 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 <del>Dragons</del> Aliens: The Unsolved Equation</i>	<div> <div>Apr. 2018 — present</div> <div>Fall 2020 — present</div> <div>13 Dec. 2018, 11 Sep. 2019, 15 Jan. 2020</div> <div>16. Sep. 2020</div> <div>17 Jul. 2019</div> <div>11 Oct. 2018</div> </div>
<a href="#">Texas A&amp;M Physics &amp; Engineering Festival</a> Texas A&M University, Department of Physics & Astronomy	Apr. 2017, 2018, 2019, 2021
<a href="#">Public Star Parties</a> Texas A&M University, Department of Physics & Astronomy	Spring 2017
Dallas Arboretum, UT Dallas Society of Physics Students Earth Day The Joy of Science	<div>Apr. 2015</div> <div>Apr. 2014</div>
UT Dallas Society of Physics Students, Secretary & Vice President The University of Texas at Dallas	Fall 2013 — Spring 2016
<a href="#">27th Texas Symposium on Relativistic Astrophysics</a> , 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