

# Joanne Tan

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## RESEARCH INTERESTS

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the circumgalactic medium (CGM), absorption line studies, galaxy formation and evolution, galaxy dynamics and kinematics, machine learning applications on and statistical inferences from astronomical datasets

## EDUCATION & APPOINTMENTS

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### Max Planck Institute for Astrophysics (MPA)

Ph.D in Physics

*The cosmological formation of massive galaxies since  $z=5$*

Advisor: Dr. Thorsten Naab

Garching, Germany

Sep 2022–present

### Texas A&M University (TAMU)

MS in Astronomy

*Fraction of tidal disruption events in AGNs hosted by dwarf galaxies*

Advisors: Prof. Jonelle Walsh, Dr. Guang Yang

College Station, TX, USA

Aug 2020–May 2022

### Post-baccalaureate research assistant

Advisors (on separate projects): Prof. Gibor Basri, Dr. Laurie Pearce

Berkeley, CA, USA

Jan 2020–Jul 2020

### University of California, Berkeley (UC Berkeley)

BA in Astrophysics, BA in Physics

Berkeley, CA, USA

Aug 2016–Dec 2019

## PUBLICATIONS

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1. **Tan, J.**; Naab, T.; Anand, A.; Černetič, M.; Kauffmann, G.; Davé, R.; Röttgers, B.; et al. “*Metal absorption lines and their evolution since  $z=5$  in the IllustrisTNG simulations*”, in prep.
2. **Tan, J.**; Naab, T.; Černetič, M.; Kauffmann, G.; Davé, R.; Kacprzak, G.; Röttgers, B.; et al. “*Shedding light onto the kinematics of the circumgalactic medium with metal absorption lines analysis of cosmological zoom simulations*”, in prep.
3. **Tan, J.**; Yang, G.; Walsh, J. L.; Bauer, F. E.; Brandt, W. N.; Chen, C.-T.; Luo, B.; Sun, M.; Xue, Y.; et al. “*Rare Occasions: Tidal Disruption Events Rarely Power the AGNs Observed in Dwarf Galaxies*”, [ApJ 2025, 980, 13](#).
4. Hauschild Roier, G. R.; Storch-Bergmann, T.; McDermid, R. M.; Walsh, J. L.; **Tan, J.**; Cohn, J.; et al, “*Gas inflows in the polar ring of NGC 4111: the birth of an AGN*”, [MNRAS 2022, 512, 2556](#).
5. Basri, G.; Streichenberger, T.; McWard, C.; Edmond IV, L.; **Tan, J.**; Lee, M.; Melton, T.. “*A New Method for Estimating Starspot Lifetimes Based on Autocorrelation Functions*”, [ApJ 2022, 924, 31](#).
6. **Tan, J.** and Basri, G.. “*Double-dipping to Refine Stellar Rotation Periods*”, [Astron. Nachr. 2020; 341: 513–518](#).

## HONORS & AWARDS

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**Departmental Merit Fellowship, Department of Physics & Astronomy, TAMU** 2020–2022  
Fellowship awarded to incoming graduate students.

**Undergraduate Research Apprentice Program (URAP) Apprentice** 2018–2019  
Worked with **Dr. Laurie Pearce** and **Gil Breger** on *Computational Ancient Astronomy and Reproducible Research*.

## SKILLS

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<b>Computer Languages</b>	Python, IDL, L <sup>A</sup> T <sub>E</sub> X, bash, R
<b>Other Software/Tools</b>	git, html, CSS, PyRAF/IRAF, CIAO, X-CIGALE, Cloudy, CUDA, PyTorch, Tensorflow, Keras, Scikit-learn, PyGAD, pPXF, LabVIEW
<b>Languages</b>	<i>Native:</i> English, Mandarin Chinese; <i>Advanced:</i> Malay; <i>Beginner/Intermediate:</i> Cantonese, Norwegian, French, German, Korean

## TALKS & PRESENTATIONS

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<b>“Resolving the Circumgalactic Medium and its Impact on Galaxy Evolution”</b> <i>Santa Cruz, Chile</i> (Contributed)	Nov 2024
<b>“Breakthroughs in Galaxy Formation” - Computational Galaxy Formation Workshop</b> <i>Ringberg, Germany</i> (Invited)	Oct 2024
<b>IMPRS-Astro Hackathon</b> <i>Heidelberg, Germany</i> (Contributed)	May 2024
<b>Coffee Talk, Institute for Astronomy, Royal Observatory</b> <i>Edinburgh, United Kingdom</i> (Invited)	Oct 2023
<b>Astrophysics Group Seminar, UCL Dept of Space and Climate Physics</b> <i>Dorking, United Kingdom</i> (Invited)	Jun 2023
<b>XV IMPRS Symposium</b> <i>Garching, Germany</i> (Contributed)	Jun 2023
<b>Global Malaysian Astronomers’ Convention (GMAC)</b> <i>Kuala Lumpur, Malaysia</i> (Invited)	Jan 2023
<b>Astronomy Poster Summer Intern Symposium (APSIS), UC Berkeley</b> <i>Berkeley, CA</i> (Contributed poster)	Aug 2019
<b>The Interplay of Prosopography, Astronomy, and Graphology, LMU München</b> <i>Munich, Germany</i> (Invited)	Jul 2018

## PROFESSIONAL MEMBERSHIP & SERVICE

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<b>MPA PhD Student Representative</b>	2024–
<b>LOC member</b> , Breakthroughs in Galaxy Formation, <i>Ringberg, Germany</i>	2024
<b>Member of post-conference working groups and future conference planning committee</b> , GMAC 2023	2023–
<b>Academic Council member</b> , Malaysia Olympiad on Astronomy & Astrophysics	2023–
<b>LOC member</b> , XV IMPRS Symposium, <i>Garching, Germany</i>	2023
<b>LOC member</b> , The Multiphase Circumgalactic Medium, <i>Ringberg, Germany</i>	2023
<b>Member of the Steering Committee &amp; Co-Lead of the Publicity Working Group</b> , GMAC 2023, <i>Kuala Lumpur, Malaysia</i>	2022–2023

## TEACHING & GRADING EXPERIENCE

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<b>Graduate Student Instructor, TAMU</b> Physics 201: College Physics (Lab)	Fall 2020, Spring 2021
<b>Undergraduate Student Instructor, UC Berkeley</b> Astro 120: Optical & Infrared Astronomy Lab	Fall 2019
<b>Course Grader, UC Berkeley</b> – Astro C161: Relativistic Astrophysics and Cosmology	Spring 2020
– Astro C12: The Planets	Spring 2019
– Physics 77: Intro to Computational Techniques in Physics	Spring 2019
– Astro C10: Introduction to General Astronomy	Fall 2018

## OUTREACH EXPERIENCE

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- Volunteered at the “Meet-an-Astronomer” event at GMAC 2023 pre-conference roadshow, *Kuala Lumpur, Malaysia* 2023
- Volunteered for departmental outreach events organized by the Department of Astronomy, e.g., Astronomy Night (monthly), Bay Area Science Festival and Cal Day (annual), *Berkeley, CA* 2017–2019
- As a member of the *Undergraduate Astronomy Society*, mentored lowerclassmen and transfer students to ease their transition into the school and department community, *Berkeley, CA* 2017–2019