Alex Teachey

amteachey@asiaa.sinica.edu.tw | alexteachey.com | ORCID | +1 804-366-0404 | +886 09-6350-9533 | US citizen

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Education

Columbia University in the City of New York 2015 - 2020
On the Detection and Characterization of Exomoons Through Survey and Targeted Observations
– *Doctor of Philosophy*, Astronomy 2020
– *Master of Philosophy*, Astronomy 2018
– *Master of Arts*, Astronomy 2017

Hunter College (City University of New York) 2012 - 2015
– *Bachelor of Arts*, Physics – *summa cum laude*

New York University 2003 - 2006
– *Bachelor of Fine Arts*, Theatre – *magna cum laude*

Affiliations

Academia Sinica Institute of Astronomy & Astrophysics
Distinguished Postdoctoral Fellow 2020 - Present

Columbia University Department of Astronomy
National Science Foundation Graduate Research Fellow 2015 - 2020

The American Museum of Natural History Department of Astrophysics
Undergraduate Researcher 2013 - 2015

The National Radio Astronomy Observatory (Socorro, NM)
National Science Foundation REU Summer 2014

Awards

National Science Foundation Graduate Research Fellowship (NSF GRFP) 2015 - 2020
Hubble Space Telescope observation GO-15149 (principal investigator) 2017
Phi Beta Kappa honor society July 2015
Undergraduate Research Fellowship (Hunter College) 2014 and 2015
Raab Presidential Fellowship (Hunter College) 2013

Publications & Products

Refereed papers:

Teachey, A. & Kipping, D.M.. "Identifying Potential Exomoon Signals with Convolutional Neural Networks". Monthly Notices of the Royal Astronomical Society, September 2021. arXiv:2109.10503

Teachey, A. "The Exomoon Corridor for Multiple Moon Systems". Monthly Notices of the Royal Astronomical Society, July 2021. arXiv:2106.13421

Teachey, A., Kipping, D.M., Burke, C.J., Angus, R., and Howard, A.W.. "Loose Ends for the Exomoon Candidate Host Kepler-1625b". April 2019. The Astronomical Journal, February 2020. arXiv:1904.11896

Teachey, A. & Kipping, D.M. "Evidence for a Large Exomoon Orbiting Kepler-1625b". Science Advances, October 2018. arXiv:1810.02362

Teachey, A., Kipping, D.M., and Schmitt, A.R.. "HEK VI: On the Dearth of Galilean Analogs in *Kepler*, and the Exomoon Candidate Kepler-1625b I". The Astronomical Journal, January 2018. arXiv:1707.08563

Kipping, D.M., and **Teachey, A.**. "Impossible moons – Transit timing effects that cannot be due to an exomoon". The Monthly Notices of the Royal Astronomical Society *under review*. May 2020. arXiv:2004.04230

Kipping, D.M. & **Teachey, A.**. "A Cloaking Device for Transiting Planets". Monthly Notices of the Royal Astronomical Society, June 2016. arXiv:1603.08928.

Abrahams, R.D., **Teachey, A.**, Paglione, T.A.D.. "Calibrating Column Density Tracers with Gamma-Ray Observations of the ρ Ophiuchi Molecular Cloud". The Astrophysical Journal, January 2017. arXiv:1611.02265.

Kipping, D.M., Torres, G., Henze, C., **Teachey, A.**, *et al.* "A Transiting Jupiter Analog". The Astrophysical Journal, April 2016. arXiv:1603.00042.

Kipping, D.M., Nesvorný, D., Hartman, J., [...], and **Teachey, A.**. "A resonant pair of warm giant planets revealed by TESS". Monthly Notices of the Royal Astronomical Society, April 2019. arXiv:1902.03900.

In preparation:
"On the prediction of microlensing events by known exoplanets for mass determination and exomoon detection". **Teachey, A.**

"Identification of Planet Candidates in Full-Frame Images from the TESS Continous Viewing Zone." *Chawla, C. & **Teachey, A.** **student advisee*

"A search for exocomets with TESS". Marshall, J. & **Teachey, A.**, et. al.

Software:
`MoonPy` light curve tools. github.com/alexteachey/moonpy 2019

Professional Presentations

Invited colloquium, National Tsing Hua University (Taiwan) (forthcoming)	February 2022
Oral presentation, Taiwan Physical Society annual meeting 2022 (forthcoming)	January 2022
Invited colloquium, National Taiwan Normal University	November 2021
Invited talk, Circumplanetary Disk and Satellite Formation II Conference	March 2021
Invited colloquium, National Central University (Taiwan)	March 2021
Invited seminar, University of Cambridge	May 2020
Invited colloquium, Academia Sinica Institute of Astronomy & Astrophysics	February 2020
Invited seminar, Yale University	January 2020
AAS 235 in Honolulu, HI (dissertation talk)	January 2020
Extreme Solar Systems IV in Reykjavík, Iceland (poster)	August 2019
ERES V conference at Cornell University (talk)	June 2019
Seminar, University of Oxford	February 2019
Seminar, University College London	February 2019
AAS 233 in Seattle, WA (talk)	January 2019
Exoplanets II conference at the University of Cambridge (poster)	July 2018
ERES IV conference at Pennsylvania State University (talk)	June 2018
Diversis Mundi conference in Santiago, Chile (talk)	March 2018
AAS 231 in Washington, DC (talk and poster)	January 2018
AAS 229 in Grapevine, TX (talk)	January 2017
AAS 225 in Seattle, WA (poster)	January 2015

Teaching & Mentoring

ASIAA Summer Student Program 2021 Summer 2021
Sole advisor for one student (Chetan Chawla) and co-advisor for another (Charity Chien-Chu Wei).

Graduate Teaching Fellow Fall 2016 - Fall 2017
Taught three semesters of introductory astronomy labs. Designed the curriculum and developed several new labs, incorporating technology resources.

Lecture Teaching Assistant Fall 2015 - Spring 2016
In-class assistant for "Life in the Universe" and "Stars & Atoms".

Outreach

Regular contributions:

Co-Host, Astronomy on Tap Taipei (monthly)	Fall 2020 - Present
Co-Host, Weekly Space Hangout (monthly)	February 2020 - Present
Co-Host, Astronomy on Tap New York City (monthly)	Fall 2018 - Spring 2020
Co-Host, Out In Space (LGBTQIA+ in astro podcast)	Fall 2019 - Fall 2020

Guest contributions:

ASIAA Open House "Ask The Astronomers" (video)	November 2021
Cool Worlds Lab YouTube channel (contributor)	2016 - 2020
Skype A Scientist volunteer	Fall 2019
Amateur Astronomers Association of New York (public lecture)	December 2019
Intrepid Museum GOALS for Girls (keynote lecture)	November 2019
The Bluffs Community Center (public lecture)	December 2018
Westchester Amateur Astronomers (public lecture)	June 2018
Westport Astronomical Society (public lecture)	February 2018
Columbia University Public Outreach Night (lecture)	October 2017
Rider University "Science Fridays" (public lecture)	October 2017
Congressional District Office Meeting (Sen. Chuck Schumer)	August 2017
Entertaining Science at Cornelia Street Cafe (public lecture)	June 2017
Arts and Astro at Columbia University (public talk)	March 2017
South Bronx Classical Charter School II (classroom visit)	May 2016
Astronomy on Tap NYC guest presenter (various topics)	2016 - 2018
Columbia University Public Outreach Night volunteer	2015 - Present
Sagan's Brain (science outreach blog)	2009 - 2016

Select Media

The Fraser Cain YouTube Channel (Universe Today)	November 2021
The Download (Parts 1, 2, 3, 4, 5) (Radio Taiwan International)	October 2021
AAASky (Amateur Astronomers Association of New York)	April 2021
ASIAA astronomy podcast	March 2021
Science Friday (WNYC)	October 2018
Quirks & Quarks (CBC radio)	October 2018
Guest columnist, *Scientific American*	July 2017
The Roe Conn Show (WGN radio)	April 2016
The Takeaway (WNYC)	March 2014

Administrative Experience & Service

ASIAA Summer Research Committee	2022
Magellan & MMT Time Allocation Committee (internal ASIAA review)	2021
Admissions Committee (Columbia Dept of Astronomy)	2019
Referee, *The Astrophysical Journal* (2×)	2018, 2021
Referee, *Monthly Notices of the Royal Astronomical Society*	2021
Graduate Student Representative (Columbia Dept of Astronomy)	2017 - 2018
Building Committee (Columbia Dept of Astronomy)	2017
Undergraduate Administrative Aide (NYU Dept of French)	2007 - 2012

Graduate Coursework

Radiative Processes	J. Halpern
Stellar Structure & Evolution	G. Bryan
Galactic Dynamics	J. van Gorkom & K. Johnston
Fluid Dynamics	G. Bryan
Instabilities	L. Sironi
Physics of the ISM & IGM	F. Paerels
Astrophysics II (Black Holes and AGN)	A. Beloborodov
Cosmology	L. Hui

Skills

Python, machine learning, Bayesian analysis, transit modeling, HST observation planning and data reduction, time-domain photometry analysis, N-body simulations, German (intermediate), Mandarin Chinese (intermediate), administration, public outreach

Advisors

David M. Kipping (Columbia)	Fall 2015 - Summer 2020
Marcel A. Agüeros (Columbia)	Fall 2016 - Spring 2017
Timothy A.D. Paglione (CUNY / AMNH)	Spring 2013 - Summer 2015
Elisabeth A.C. Mills (NRAO)	Summer 2014