

Alex Teachey

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Education	Columbia University	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
	CUNY Hunter College	2012 - 2015
	– Bachelor of Arts, Physics – <i>summa cum laude</i>	
	New York University	2003 - 2006
	– Bachelor of Fine Arts, Theatre – <i>magna cum laude</i>	
Affiliations	Academia Sinica Institute of Astronomy & Astrophysics	
	<i>Distinguished Postdoctoral Fellow</i>	2020 - Present
	Columbia University Department of Astronomy	
	<i>National Science Foundation Graduate Research Fellow</i>	2015 - 2020
	The American Museum of Natural History Department of Astrophysics	
	<i>Undergraduate Researcher</i>	2013 - 2015
	The National Radio Astronomy Observatory (Socorro, NM)	
	<i>National Science Foundation REU</i>	Summer 2014
Awards	Postdoctoral Fellow Academic Research Award - MOST (Taiwan) (NT \$100,000)	2022
	Hubble Space Telescope observation GO-15149 (PI) (US \$52,683)	2017
	Graduate Research Fellowship - National Science Foundation (US \$144,000)	2015 - 2020
	JWST observation Cycle 3 observation (6491) (Co-I)	2024
	Keck (NOIRLab, 0.5 nights) (Co-I)	2021
	Phi Beta Kappa honor society	July 2015
	Undergraduate Research Fellowship - Hunter College (US \$ 2000)	2014 and 2015
	Raab Presidential Fellowship - Hunter College (US \$4100)	2013
Publications & Products	<u>Book chapter:</u>	
	Teachey, A. “Detecting and Characterizing Exomoons and Exorings.” Review chapter of the <i>Handbook of Exoplanets</i> , 2nd edition. arXiv:2401.13293 .	January 2024
	<u>Refereed papers:</u>	
	Dalba, P., Kane, St., Isaacson, H., [...] Teachey, A. , & Villanueva, S.. “Giant Outer Transiting Exoplanet Mass (GOT EM) Survey. IV. Long-term Doppler Spectroscopy for 11 Stars Thought to Host Cool Giant Exoplanets.” The Astrophysical Journal Supplement Series. arXiv:2401.03021	March 2024
	Teachey, A. & Agarwal, G. “On the Impact and Utility of Single-Moon Modeling of Multiple Exomoon Systems”. <i>Monthly Notices of the Royal Astronomical Society</i> . arXiv:2402.17324	February 2024
	Kipping, D., Teachey, A. , Yahalomi, D., <i>et al.</i> “A Reply to: Large Exomoons unlikely around Kepler-1625 b and Kepler-1708 b”. submitted to <i>Nature Astronomy</i> . arXiv:2401.10333 .	January 2024

	Kipping, D.M., Bryson, St., Burke, C., [...] & Teachey, A. “An Exomoon Survey of 70 Cool Giant Exoplanets and the New Candidate Kepler-1708 b-i.” <i>Nature Astronomy</i> . Citations: 39. arXiv:2201.04643	January 2022
	Teachey, A. & Kipping, D.M.. “Identifying Potential Exomoon Signals with Convolutional Neural Networks”. <i>Monthly Notices of the Royal Astronomical Society</i> . Citations: 3. arXiv:2109.10503	September 2021
	Teachey, A. “The Exomoon Corridor for Multiple Moon Systems”. <i>Monthly Notices of the Royal Astronomical Society</i> . Citations: 7. arXiv:2106.13421	July 2021
	Kipping, D.M., and Teachey, A. .. “Impossible moons – Transit timing effects that cannot be due to an exomoon”. <i>The Monthly Notices of the Royal Astronomical Society</i> . Citations: 13. arXiv:2004.04230	May 2020
	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. <i>The Astronomical Journal</i> . Citations: 27. arXiv:1904.11896	February 2020
	Kipping, D.M., Nesvorný, D., Hartman, J., [...], and Teachey, A. .. “A resonant pair of warm giant planets revealed by TESS”. <i>Monthly Notices of the Royal Astronomical Society</i> . Citations: 28. arXiv:1902.03900 .	April 2019
	Teachey, A. & Kipping, D.M. “Evidence for a Large Exomoon Orbiting Kepler-1625b”. <i>Science Advances</i> . Citations: 125. arXiv:1810.02362	October 2018
	Teachey, A. , Kipping, D.M., and Schmitt, A.R.. “HEK VI: On the Dearth of Galilean Analogs in <i>Kepler</i> , and the Exomoon Candidate Kepler-1625b I”. <i>The Astronomical Journal</i> , Citations: 89. arXiv:1707.08563	January 2018
	Abrahams, R.D., Teachey, A. , Paglione, T.A.D.. “Calibrating Column Density Tracers with Gamma-Ray Observations of the ρ Ophiuchi Molecular Cloud”. <i>The Astrophysical Journal</i> . Citations: 4. arXiv:1611.02265 .	January 2017
	Kipping, D.M. & Teachey, A. .. “A Cloaking Device for Transiting Planets”. <i>Monthly Notices of the Royal Astronomical Society</i> . Citations: 33. arXiv:1603.08928 .	June 2016
	Kipping, D.M., Torres, G., Henze, C., Teachey, A. , <i>et al.</i> “A Transiting Jupiter Analog”. <i>The Astrophysical Journal</i> . arXiv:1603.00042 . Citations: 41.	April 2016
	<i>In prep:</i>	
	Teachey, A. & Chawla, C. “Identification of Planet and Eclipsing Binary Candidates in Full-Frame Images from the TESS Continuous Viewing Zone”.	
	Teachey, A. “On the prediction of microlensing by known exoplanets for mass determination and exomoon detection”.	
	<i>Software:</i>	
	MoonPy light curve tools. github.com/alexteachey/moonpy	2019 - Present
Teaching & Mentoring	ASIAA Summer Student Program	2021 - Present
	<i>Students:</i>	
	Garvit Agarwal (IISER Pune) & Al Emran (University of Arkansas)	Summer 2022
	Chetan Chawla (ZS Associates) & Charity Chien-Chu Wei (UC Santa Cruz)	Summer 2021
	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”.		

Administrative Experience & Service	ASIAA Postdoc Representative	2022 - Present
	ASIAA Summer Research Committee	2022 - Present
	Magellan & MMT Time Allocation Committee (internal ASIAA review)	2021
	Admissions Committee (Columbia Dept of Astronomy)	2019
	Referee, <i>Astronomy & Astrophysics</i>	2022
	Referee, <i>The Astrophysical Journal</i> (4×)	2018 - Present
	Referee, <i>Monthly Notices of the Royal Astronomical Society</i> (2×)	2021, 2022
	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
Professional Presentations	Contributed talk, 20th annual Asia Oceania Geosciences Society meeting (Singapore)	August 2023
	Poster presentation, Protostars and Planets VII (Kyoto)	April 2023
	Contributed talk, Stars, Planets, and Formosa conference	August 2022
	Invited colloquium, Universidad Nacional Autónoma de México	March 2022
	Invited colloquium, National Tsing Hua University (Taiwan)	February 2022
	Contributed talk, Taiwan Physical Society annual meeting 2022	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
	<i>Diversis Mundi</i> 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	
Outreach	<i>Regular contributions:</i>	
	Co-Host, Astronomy on Tap Taipei (monthly)	Fall 2020 - Present
	Co-Host, Weekly Space Hangout (monthly)	February 2020 - May 2022
	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
	<i>Guest contributions:</i>	
	ASIAA Open House “ Ask The Astronomers ”	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
<i>Sagan's Brain</i> (science outreach blog)	2009 - 2016

Select Media	Zoom In, Zoom Out (TaiwanPlus News)	April 2024
	The Astro Show (Wyoming Stargazing)	September 2022
	"Living and Working in Taiwan" (ASIAA)	September 2022
	The Fraser Cain YouTube Channel (Universe Today)	November 2021
	<i>The Download</i> (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
	<i>Science Friday</i> (WNYC)	October 2018
	<i>Quirks & Quarks</i> (CBC radio)	October 2018
	Guest columnist, <i>Scientific American</i>	July 2017
	<i>The Roe Conn Show</i> (WGN radio)	April 2016
<i>The Takeaway</i> (WNYC)	March 2014	

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

References David M. Kipping (Columbia), Caleb Scharf (Columbia), Min-Kai Lin (ASIAA)