Contact Information	Center for Astrophysics 60 Garden Street MS 78 Cambridge, MA, 02138	(+1) 617-495-7259 https://richteague.github.io richard.d.teague@cfa.harvard.edu	
EMPLOYMENT	Massachusetts Institute of Technology Department of Earth, Atmospheric and Planetary Sciences Assistant Professor	July 2022	
	Center for Astrophysics Harvard & Smithsonian Submillimeter Array Fellow	Sep. 2019 – June 2022	
	University of Michigan Postdoctoral Researcher	May 2017 – Jul. 2019	
	Max-Planck-Institute for Astronomy Postdoctoral Researcher	Jan. 2017 – Apr. 2017	
EDUCATION	Max-Planck-Institute for Astronomy, Heidelberg, Germany Ph.D. in Astronomy (Magna Cum Laude)	/ Oct. 2013 – Jan. 2017	
	University of Edinburgh , Edinburgh, United Kingdom MPhys Astrophysics (First Class Honours)	Sep. 2008 – May 2013	
Honours & Awards	Harvard Data Science Initiative Research Fund (\$9,700) Regularized Maximum Likelihood Imaging: A New Method for Detecting Pla	Mar. 2020	
	Ernst Patzer Award Awarded for the best refereed publication by a young scientist.	Nov. 2016	
	Pre-Honours Certificate of Merit Awarded for top 5% performance in pre-honours exams.	May 2011	
	Pre-Honours Certificate of Merit	May 2010	
	Awarded for top 5% performance in pre-honours exams.	,	
Publication Summary	15 lead author papers, including one published in <i>Nature</i> , and 45 co-author papers, totaling 1306 citations (ADS). A full publication list can be found at the end of the CV.		
OBSERVATIONAL TIME SUMMARY	I have been awarded over 265 hours (335 hours) of time on ALMA as PI (co-I), including as the exoALMA Large Program of which I am PI, 20 hours (165 hours) on IRAM telescopes as PI (co-I), 16 hours (30 hours) on the SMA as PI (co-I) and 8 hours (18 hours) on JWST as co-PI (co-I). I have also been a co-investigator on projects for the VLA , the VLT and the Magellan telescopes, with awards of 50 hours, 25 hour and 2 nights, respectively. A break down of PI proposals can be found at the end of the CV.		
Professional Services	SMA Interferometry School SOC SMA, Hilo, Hawaii, USA	Mar. 2021	
	Advanced Data Analysis Techniques for ALMA SOC NRAO, Charlottesville, Virginia, USA [postponed due to Covid-19]	Oct. 2020	
	SMA Seminar Organizer Departmental Seminar Series	2020 - 2021	
	Visualizing the Kinematics of Planet Formation SOC Flatiron Institute, New York City, USA	Oct. 2019	
	Postdoc and Research Scientist DEI Representative Department Diversity, Equity and Inclusion Committee Member	2018 – 2019	
	Equi-Tea Organizer Diversity, Equity and Inclusion Journal Club	2018 – 2019	

	Stars, Planets and Formation Seminar Organizer Departmental Seminar Series	2018 – 2019
	Conversations on Equity and Inclusion Co-organizer Joint Physics / Astronomy / Space Sciences DEI Colloquium Series	2018 – 2019
	NESSF External Reviewer	2018, 2020
	Heidelberg MPG Student Workshop Organizer	2016
	PSF Coffee Organizer Departmental Seminar Series	2015 – 2017
	MPIA Student Representative	2015 – 2017
	MPIA Student Workshop Organizer	2015, 2016
	IMPRS Graduate Student Representative	2013 – 2017
	Referee for AAS, A&A, MNRAS and Nature journals	
SUPERVISION	Haochuan Yu Beijing Normal University Undergraduate student.	2020 -
	Alessandra Canta Harvard University Undergraduate student. Co-supervised with Karin Öberg, Harvard	2020 -
	Felipe Alcaron University of Michigan Graduate student. Co-supervised with Ted Bergin and Ke Zhang, UMich.	2019 – 2020
	Jenny Calahan University of Michigan Graduate student. Co-supervised with Ted Bergin and Ke Zhang, UMich.	2019 – 2020
	Deryl Long University of Michigan Undergraduate student. Co-supervised with Ted Bergin and Ke Zhang, UMich.	2019
	Case Hazewinkel University of Michigan Undergraduate student. Co-supervised with Ted Bergin, UMich.	2019
	Jeanne Kwon University of Michigan Undergraduate Research Opportunity Program	2018 – 2019
	Julian Penzinger Ludwig Maximilian University Summer student. Co-supervised with Dmitry Semenov, MPIA.	2016, 2018
TALKS &	Munich Join Astronomical Colloquium	Oct. 2021
SEMINARS	Mapping the Assembly of Planetary Systems in 6 Dimensions	(invited)
	ETH Zurich Exoplanets & Habitability Seminar	May 2021
	Witnessing the Assembly of Planetary Systems	(invited)
	Cambridge Exoplanet Center Seminar Witnessing the Assembly of Planetary Systems	May 2021 (invited)
	Towards the Comprehensive Characterization of Exoplanets: Science at the Interface of Multiple Measurement Techniques	Apr. 2021
	Transforming ALMA into a Planet Hunting Facility	A 0004
	McMaster University Astrophysics Seminar Witnessing the Assembly of Planetary Systems	Apr. 2021 (invited)
	Circumplanetary Disks II	Mar. 2021
	Observations and Observational Predictions	(invited)
	Max Planck Research Group Selection Symposium Witnessing the Assembly of Planetary Systems	Feb. 2021 (invited)
	Caltech Dix Planetary Science Department Seminar Planet Formation in Six Dimensions	Feb. 2021 (invited)
	Five Years After HL Tau: A New Era in Planet Formation Observing the Kinematics of Gaseous Substructures	Dec. 2020
	Research Unit Transition Disks (RUTD) Conference Observing the Dynamics of Planet Disk Interactions	Oct. 2020 (invited)

	From Clouds to Planets II: The Astrochemical Link ALMA's 3D View of Planet Formation [postponed due to Covid-19]	Oct. 2020 (invited)
	Exoplanets III	July 2020
	Kinematical Detection and Characterizing of Protoplanets with ALMA	0diy 2020
	MPIA Königstuhl Colloquium	July 2020
	Visualizing the Assembly of Planetary Systems	(invited)
	JPL Astrophysics Colloqium Witnessing the Dynamics of Planetary Assembly	Nov. 2019 (invited)
	Visualizing the Kinematics of Planet Formation Exploiting ALMA's Potential for Planet Hunting	Oct. 2019
	Gordon Research Seminar Unveiling the Dynamics of Planet Formation	June 2019
	IAU Symposium 350: Laboratory Astrophysics The Physical Conditions of Planet Formation with Molecular Excitation	Apr. 2019 (invited)
	Planet-Forming Disks	Mar. 2019
	Unveiling the Dynamics of Planet Formation	(invited)
	NAOJ Theoretical Astronomy Seminar	Oct. 2018
	Observing the Kinematics of Planet-Disk Interactions with ALMA	(invited)
	LMU Munich Astronomy Colloquium	Aug. 2018
	Using Kinematics to Search for Embedded Protoplanets	(invited)
	University of Tübingen Astronomy Seminar Kinematical Detections of Embedded Protoplanets	Aug. 2018 (invited)
	Astrophysical Frontiers in the Next Decade and Beyond The First Kinematical Detection of Embedded Protoplanets	Apr. 2018
	Magnetic Fields or Turbulence	Feb. 2018
	A Spatially Resolved Search for Turbulence in TW Hya	
	MPIA Patzer Awards Colloquium Measuring Turbulence in TW Hya with ALMA: Methods and Limitations	Nov. 2016 (invited)
	MPIA Königstuhl Colloquium	Nov. 2016
	Observing the Earliest Stages of Planet Formation	(invited)
	Astrochemistry with ALMA Cycle 4 Detecting Turbulence in Protoplanetary Disks	Jun. 2016 (invited)
	Sant-Cugat Forum on Astrophysics Turbulence in Protoplanetary Disks: Methods and Limitations	Apr. 2016
	Protoplanetary Discussions Turbulence in TW Hya	Mar. 2016
	Chemical Diagnostics of Star and Planet Formation Deuterium Fraction in Protoplanetary Disks	Jan. 2015 (invited)
	ZAG - IPAG - MPIA Workshop on Planet Formation	Jan. 2015
	Deuterium Fraction in DM Tau	(invited)
SUCCESSFUL TELESCOPE PROPOSALS (AS PI)	ALMA PI: Teague, R. , 183 hours, 2021.1.01123.L, A ranked co-PIs: Bensity, M., Facchini, S., Fukagawa, M. & Pinte, C. <i>exoALMA Large Program</i>	2021
	JWST co-Pls: Cugno, G. & Teague, R., 8 hours, 2153, Detecting a Young 2 Jupiter Mass Planet Embedded in the Disk of HD 163296	Cycle 1
	SMA PI: Teague, R., 6 hours, 2020A-S033, B ranked A 3D Exploration of an Edge-On Self-Gravitating Disk	2020b
	SMA PI: Teague, R., 10 hours, 2020A-S033, A ranked A 3D Exploration of an Edge-On Self-Gravitating Disk	2020a
	ALMA PI: Teague, R. , 13.8 hours, 2019.1.01357.S, A ranked Constraining the H2 Surface Density Profile in IM Lup	2019

	ALMA PI: Teague, R. , 3.0 hours, 2019.1.00794.S, B ranked Detecting the Photoevaporative Wind in IM Lup	2019
	ALMA PI: Teague, R. , 33.2 hours, 2019.1.00419.S, B ranked Mapping the 3D Kinematic Structure of Planet Formation	2019
	ALMA PI: Teague, R. , 20.2 hours, 2018.A.00021.S, DDT Confirmation of an Embedded Planet in the Disk of TW Hya	2019
	Magellan/MagAO PI: Teague, R., 6 hours Searching for Wide Separation Planets in AS 209	2018
	ALMA PI: Teague , R. , 6.7 hours, 2018.1.00980.S, A ranked An Unambiguous Detection of a Magnetic Field in a Protoplanetary Disk	2018
	ALMA PI: Teague, R. , 5.3 hours, 2016.1.00440.S, A ranked Model Independent Study of Turbulence and Temperature in TW Hya	2016
	IRAM PdBI PI: Teague, R., 19.9 hours, W14BI, C ranked Disk Diagnostics with Deuteration	2014
(AS CO-I)	Including over 355 hours with ALMA , 150 hours with IRAM telescopes, 30 hours with the SMA , 50 hours with the VLA , 50 hours with VLT (X-SHOOTER, SPHERE and CRIRES), 2 nights with Magellan (MagAO/MagAOx) and 18 hours with JWST .	
Outreach	Unversity of Michigan Lowbrow Astronomers How to Find Baby Planets	Nov. 2020
SCHOOL PARTICIPATION	45th Saas-Fee Course From Protoplanetary Disks to Planet Formation	2015
PARTICIPATION		2015
	Heidelberg Graduate School on Fundamental Physics	2013
	DIANA Protoplanetary Disk School	2014
OBSERVING EXPERIENCE	Sub-Millimeter Array Monthly rota	Sep. 2019 –
	MPG/ESO 2.2m 14 nights	2016
TEACHING	Wavefront Analysis Laboratory Instructor	2014
PUBLICATIONS (LEAD AUTHOR)	Teague, R. & Loomis, R. A., ApJ, 899 The Excitation Conditions of CN in TW Hya	
	Teague, R. , Jankovic, M. R., Haworth, T. J., et al., MNRAS, 495 A Three Dimensional View of Gomez's Hamburger	
	Teague, R. , 2019, IAU Proceedings Series, 350 Tracing The Physical Conditions of Planet Formation with Molecular Excitation	
	Teague, R. , Bae, J., Huang, J., Bergin, E. 2019, ApJL, 884 Spiral Structure in the Gas Disk of TW Hya	
	Teague, R. , Bae, J., Bergin, E. 2019, Nature, 574 Meridional Flows in the Disk Around a Young Star	
	Teague, R. , 2019, Journal of Open Source Software, 4 GoFish: Fishing for Line Observations in Protoplanetary Disks	
	Teague, R. , 2019, RNAAS, 3 [non-refereed] Statistical Uncertainties in Moment Maps of Line Emission	
	Teague, R. , 2019, Journal of Open Source Software, 4 eddy: Extracting Protoplanetary Disk Dynamics with Python	

Teague, R., Bae, J., Birnstiel, T. & Bergin, E., 2018, ApJ, 868 Evidence For A Vertical Dependence on the Pressure Structure in AS 209

Teague, R. & Foreman-Mackey, D., 2018, RNAAS, 2

[non-refereed] A Robust Method to Measure Centroids of Spectral Lines

Teague, R., Henning, T., Guilloteau, S., et al., 2018, ApJ, 864

Temperature, Mass, and Turbulence: A Spatially Resolved Multiband Non-LTE Analysis of CS in TW Hya

Teague, R., Bae, J., Bergin, E. A., et al., 2018, ApJL, 860

A Kinematical Detection of Two Embedded Jupiter-mass Planets in HD 163296

Teague, R., Semenov, D., Gorti, U., et al., 2017, ApJ, 835

Surface Density Perturbations in the TW Hydrae Disk at 95 au Traced by Molecular Emission

Teague, R., Guilloteau, S., Semenov, D., et al., 2016, A&A, 592

Measuring turbulence in TW Hya with ALMA: methods and limitations

Teague, R., Semenov, D., Guilloteau, S., et al., 2015, A&A, 574

Chemistry in disks. IX. Observations and modelling of HCO⁺ and DCO⁺ in DM Tauri

(CO-AUTHOR) All papers with a substantial component of student supervision are marked.

Benisty, M., Bae, J., Facchini, S., et al., ApJL, 916

A Circumplanetary Disk Around PDS 70c

Andrews, S. M., Elder, W., Zhang, S., et al., ApJ, in press

Limits on Millimeter Continuum Emission from Circumplanetary Material in the DSHARP Disks

Long, F., Andrews, S. M., Vega, J., et al., ApJ, in press

The Architecture of the V892 Tau System: the Binary and its Circumbinary Disk

Rich, E., Teague, R., Monnier, J., et al. ApJ, 913

Are Small Dust Grains actually coupled to the Gas in Protoplanetary Disks?

Pegues, J., Öberg, K. I., Bergner, J. B., et al., ApJ, 911

An ALMA Survey of Chemistry in Disks around Late-Type M-Stars

Facchini, S., Teague, R., Bae, J., et al. ApJ, in press

The chemical inventory of the planet-hosting disk PDS 70

Boehler, Y., Ménard, F., Robert, C. M. T., et al. A&A, 650

Vortex-like kinematic signal, spirals, and beam smearing effect in the HD 142527 disk

Bae, J., Teague, R., Zhu, Z., ApJ, 912

Tightly-Wound Spirals Driven by Buoyancy Resonance in Protoplanetary Disks

Cleeves, L. I., Loomis, R. A., Teague, R., et al., ApJ, 911

The TW Hya Rosetta Stone Project IV: A hydrocarbon rich disk atmosphere

Pegues, J., Czekala, I., Andrews, S. M., ApJ, 908

Dynamical Masses and Stellar Evolutionary Model Predictions of Low-Mass M-Stars

Harrison, R. E., Looney, L. W., Stephens, I. W., et al., ApJ, 908

ALMA CN Zeeman Observations of AS 209: Limits on Magnetic Field Strength and Magnetically Driven Accretion Rate

Garufi, A., Podio, L., Codella, C., et al., A&A, 645

ALMA chemical survey of disk-outflow sources in Taurus (ALMA-DOT V)

Calahan, J., Bergin, E. A., Zhang, K., et al., ApJ, 908

[student paper] Uncovering the Thermal Profile of a Typical Gaseous Protoplanetary Disk

Wölfer, L., Facchini, S., Kurtovic, N. T., et al. A&A, 648

A highly non-Keplerian protoplanetary disc

Terwisscha, J. v. S., Hogerheijde, M. R., Cleeves, L. I., et al., ApJ, 906

Spatially resolved emission of formaldehyde hints at low-temperature gas-phase formation

Öberg, K., Cleeves, L. I., Bergner, J., et al., AJ, 161

Radial and vertical distributions of DCN and DCO⁺ in the TW Hya disk

Podio, L., Garufi, A., Codella, C., et al., A&A, 644

ALMA chemical survey of disk-outflow sources in Taurus (ALMA-DOT II)

Alarcón, F., Teague, R., Zhang, K., et al., ApJ, 905

[student paper] Chemical Evolution in a Protoplanetary Disk with Dust Substructures

White, J. A., Kóspál, Á, Hughes, A. G. Hughes, et al., 2020, ApJ, 904

ALMA and VLA Observations of EX Lupi in its Quiescent State

Stephens, I. W., Fernández-López, M., Li, Z.-H., et al., 2020, ApJ, 901

Low Level Carbon Monoxide Line Polarization in two Protoplanetary Disks

Hall, C., Dong, R., Teague, R., et al., ApJ, 904

Kinematic Evidence for Gravitational Instability

Long, D. E., Zhang, K., Teague, R., et al., 2020, ApJL, 895

[student paper] Hints of a Population of Solar System Analog Planets from ALMA

Facchini, S., Benisty, M., Bae, J., et al., 2020, A&A, 639

Annular substructures in the transition disks around LkCa 15 and J1610

Garufi, A., Codella, C., Rygl, K., et al., 2020, A&A, 636

ALMA chemical survey of disk-outflow sources in Taurus (ALMA-DOT I)

Rosotti, G., Teague, R., Dullemond, C., et al., 2020, MNRAS, 495

The Efficiency of Dust Trapping in Ringed Protoplanetary Discs

Semenov, D. & Teague, R. 2020, Europhysics News, 51

Accretion disks around young stars: the cradles of planet formation

Huang, J., Andrews, S. M., Dullemond, C. P., et al., 2020, ApJ, 891

A multi-frequency ALMA characterization of substructures in the GM Aur protoplanetary disk

Rosotti., G., Benisty, M., Juhazs, A., et al., 2020, MNRAS, 491.

Spiral arms in the proto-planetary disc HD100453 detected with ALMA

Bae, J., Zhu, Z., Baruteau, C., et al., 2019, ApJL, 884

An Ideal Testbed for Planet-disk Interaction: Two Giant Protoplanets in Resonance Shaping the PDS 70 Disk

Isella, A., Benisty, M., Teague, R., et al., 2019, ApJL, 879

Detection of Continuum Submillimeter Emission Associated with Candidate Protoplanets

Cleeves, L. I., Loomis, R. A., Teague, R., et al., 2019, BAAS, 51

Realizing the Unique Potential of ALMA to Probe the Gas Reservoir of Planet Formation

Lyra, W., Haworth, T., Bitsch, B., et al., 2019, BAAS, 51

Planet formation âĂŤ The case for large efforts on the computational side

Gallo, E., Teague, R., Plotkin, R. M., et al., 2019, MNRAS, 488

ALMA observations of A0620-00: fresh clues on the nature of quiescent black hole X-ray binary jets

Schwarz, K., Teague, R., Bergin, E., et al., 2019, ApJL, 876.

Line Ratios Reveal N2H+ Emission Originates above the Midplane in TW Hydrae

Keppler, M., Teague, R., Bae, J., et al., 2019, A&A, 625

[student paper] Highly structured disk around the planet host PDS 70 revealed by high-angular resolution observations

Semenov, D., Favre, C., Fedele, D., et al., 2018, A&A, 617

Chemistry in disks. XI. Sulfur-bearing species as tracers of protoplanetary disk physics and chemistry: the DM Tau case

Flaherty, K. M., Hughes, A. M., Teague, R., et al., 2018, ApJ, 856

Turbulence in the TW Hya Disk

Fedele, D., Tazzari, M., Booth, R., et al., 2018, A&A, 610

ALMA continuum observations of the protoplanetary disk AS 209. Evidence of multiple gaps opened by a single planet

Flock, M., Nelson, R. P., Turner, N. J., et al., 2017, ApJ, 850

Radiation Hydrodynamical Turbulence in Protoplanetary Disks: Numerical Models and Observational Constraints

Dutrey, A., Guilloteau, S., Piétu, V., et al., 2017, A&A, 607

The Flying Saucer: Tomography of the thermal and density gas structure of an edge-on protoplanetary disk

Beuther, H., Linz, H., Henning, T., et al., 2017, A&A, 605

Multiplicity and disks within the high-mass core NGC 7538IRS1.

Parfenov, S. Y., Semenov, D. A., Henning, T., et al., 2017, MNRAS, 468

On the methanol emission detection in the TW Hya disc: the role of grain surface chemistry and non-LTE excitation

van Boekel, R., Henning, T., Menu, J., et al., 2017, ApJ, 837

Three Radial Gaps in the Disk of TW Hydrae Imaged with SPHERE

Haworth, T. J., Ilee, J. D., Forgan, D. H., et al., 2016, PASA, 33

Grand Challenges in Protoplanetary Disc Modelling

Feng, S., Beuther, H., Semenov, D., et al., 2016, A&A, 593

Inferring the evolutionary stages of the internal structures of NGC 7538 S and IRS1 with chemistry