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I am a lecturer in the School of Physics and Astronomy at the University of St. Andrews in the UK. I lead a research group that develops and employs a variety of statistical techniques to advance our understanding of the astrophysics of star and planet formation.

**keywords**: planet formation, astrostatistics, radio interferometry, high performance computation, spectroscopy, protoplanetary disks, exoplanets, Bayesian inference, stochastic methods, machine learning

## PROFESSIONAL APPOINTMENTS

Jul 2023 - present	Lecturer, School of Physics and Astronomy, University of St. Andrews, UK
Aug 2020 - Jun 2023	Assistant Professor, Department of Astronomy and Astrophysics
	ICDS Co-Hire, Institute for Computational and Data Sciences
	Pennsylvania State University; University Park, PA USA
2018 - 2020	NASA Hubble Fellowship Program (NHFP) Sagan Postdoctoral Fellow
	University of California Berkeley; Berkeley, CA USA
2016 - 2018	Porat Postdoctoral Fellow
	Kavli Institute for Particle Astrophysics and Cosmology
	Stanford University; Stanford, CA USA
2010 - 2016	Graduate Student
	Harvard University: Cambridge, MA USA

## **EDUCATION**

2012 - 2016	Ph.D. in Astrophysics, Harvard University, Cambridge, MA
	advisor Sean M. Andrews
2010 - 2012	Masters of Arts in Astronomy and Astrophysics, Harvard University
	advisor Edo Berger
2006 - 2010	Bachelor of Science, Aerospace Engineering, Astronomy, University of Virginia
	Jefferson Scholar, Graduated with High Distinction

# RESEARCH APPOINTMENTS

2018 - 2020	Architectures and Dynamics of Protoplanetary Systems, Postdoctoral Advisor Eugene Chiang
2016 - 2018	Disk and Stellar Dynamics of Pre-Main Sequence Systems, Postdoctoral Advisor Bruce Macintosh
2013 - 2016	<b>Ph.D. Thesis</b> : The Fundamental Properties of Young Stars, CfA, advised by Sean Andrews
2012	MMTCam Commissioning, Harvard-Smithsonian CfA, advised by Warren Brown
2010 - 2012	Masters project: Intermediate Luminosity Transients, Harvard University, advised by Edo Berger
2009 - 2010	PAPER Instrumentation Study, University of Virginia, advised by Richard Bradley
2009 - 2010	ALMA Collaborative Engineering Study, Santiago, Chile, advised by Kelsey Johnson and Alison Peck
2009	Circumstellar Disks, Smithsonian Astrophysical Observatory REU Intern, advised by Dr. Sean Andrews

#### HONORS AND AWARDS

2018 - 2020	NASA Hubble Postdoctoral Fellowship
2016 - 2018	Porat Postdoctoral Fellowship, Stanford KIPAC
2013, 2014	(2) Certificates of Distinction in Teaching, Harvard University
2011 - 2016	NSF Graduate Research Fellowship
2006 - 2010	Jefferson Scholar, UVA, full scholarship
2006 - 2010	Rodman Scholar, UVA
2010	Outstanding SEAS Student, UVA
2010	Louis T. Rader Award for Mechanical and Aerospace Engineering
	School of Engineering and Applied Sciences, UVA
2010	21 Society Fourth Year Recognition, UVA
2010	Limber Award, UVA Astronomy Department

#### REFEREED PUBLICATION SUMMARY

First author: 9 / total: 64 / citations (all): 3719 / h-index (all): 36 / (2023-01-31) [link]

#### FIRST AND SECOND AUTHOR REFEREED PUBLICATIONS

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- [2] Dynamical Masses and Stellar Evolutionary Model Predictions of M Stars, Pegues, J., Czekala, Ian, Andrews, S. M., Öberg, K. I., Herczeg, G. J., Bergner, J. B., Ilsedore Cleeves, L., Guzmán, V. V., Huang, J., Long, F., Teague, R., and Wilner, D. J. 2021, ApJ, 908, 42
- [3] Molecules with ALMA at Planet-forming Scales (MAPS). II. CLEAN Strategies for Synthesizing Images of Molecular Line Emission in Protoplanetary Disks, Czekala, Ian, Loomis, R. A., Teague, R., Booth, A. S., Huang, J., Cataldi, G., Ilee, J. D., Law, C. J., Walsh, C., Bosman, A. D., Guzmán, V. V., Gal, R. L., Öberg, K. I., Yamato, Y., Aikawa, Y., Andrews, S. M., Bae, J., Bergin, E. A., Bergner, J. B., Cleeves, L. I., Kurtovic, N. T., Ménard, F., Nomura, H., Pérez, L. M., Qi, C., Schwarz, K. R., Tsukagoshi, T., Waggoner, A. R., Wilner, D. J., and Zhang, K. 2021, ApJS, 257, 2
- [4] The Degree of Alignment between Circumbinary Disks and Their Binary Hosts, Czekala, Ian, Chiang, E., Andrews, S. M., Jensen, E. L. N., Torres, G., Wilner, D. J., Stassun, K. G., and Macintosh, B. 2019, ApJ, 883, 22
- [5] Disentangling Time-series Spectra with Gaussian Processes: Applications to Radial Velocity Analysis, Czekala, Ian, Mandel, K. S., Andrews, S. M., Dittmann, J. A., Ghosh, S. K., Montet, B. T., and Newton, E. R. 2017, ApJ, 840, 49
- [6] The Architecture of the GW Ori Young Triple-star System and Its Disk: Dynamical Masses, Mutual Inclinations, and Recurrent Eclipses, Czekala, Ian, Andrews, S. M., Torres, G., Rodriguez, J. E., Jensen, E. L. N., Stassun, K. G., Latham, D. W., Wilner, D. J., Gully-Santiago, M. A., Grankin, K. N., Lund, M. B., Kuhn, R. B., Stevens, D. J., Siverd, R. J., James, D., Gaudi, B. S., Shappee, B. J., and Holoien, T. W. S. 2017, ApJ, 851, 132
- [7] A Disk-based Dynamical Constraint on the Mass of the Young Binary DQ Tau, Czekala, Ian, Andrews, S. M., Torres, G., Jensen, E. L. N., Stassun, K. G., Wilner, D. J., and Latham, D. W. 2016, ApJ, 818, 156
- [8] A Disk-based Dynamical Mass Estimate for the Young Binary AK Sco, Czekala, Ian, Andrews, S. M., Jensen, E. L. N., Stassun, K. G., Torres, G., and Wilner, D. J. 2015, ApJ, 806, 154
- [9] Constructing a Flexible Likelihood Function for Spectroscopic Inference, Czekala, Ian, Andrews, S. M., Mandel, K. S., Hogg, D. W., and Green, G. M. 2015, ApJ, 812, 128
- [10] The Unusually Luminous Extragalactic Nova SN 2010U, Czekala, Ian, Berger, E., Chornock, R., Pastorello, A., Marion, G. H., Margutti, R., Botticella, M. T., Challis, P., Ergon, M., Smartt, S., Sollerman, J., Vinkó, J., and Wheeler, J. C. 2013, ApJ, 765, 57
- [11] *Truncated Disks in TW Hya Association Multiple Star Systems*, Andrews, S. M., **Czekala, Ian**, Wilner, D. J., Espaillat, C., Dullemond, C. P., and Hughes, A. M. 2010, ApJ, 710, 462

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- [1] Molecules with ALMA at Planet-forming Scales (MAPS): A Circumplanetary Disk Candidate in Molecular-line Emission in the AS 209 Disk, Bae, J., Teague, R., Andrews, S. M., Benisty, M., Facchini, S., Galloway-Sprietsma, M., Loomis, R. A., Aikawa, Y., Alarcón, F., Bergin, E., Bergner, J. B., Booth, A. S., Cataldi, G., Cleeves, L. I., Czekala, Ian, Guzmán, V. V., Huang, J., Ilee, J. D., Kurtovic, N. T., Law, C. J., Gal, R. L., Liu, Y., Long, F., Ménard, F., Öberg, K. I., Pérez, L. M., Qi, C., Schwarz, K. R., Sierra, A., Walsh, C., Wilner, D. J., and Zhang, K. 2022, ApJ, 934, L20
- [2] A Circumplanetary Disk around PDS70c, Benisty, M., Bae, J., Facchini, S., Keppler, M., Teague, R., Isella, A., Kurtovic, N. T., Pérez, L. M., Sierra, A., Andrews, S. M., Carpenter, J., Czekala, Ian, Dominik, C., Henning, T., Menard, F., Pinilla, P., and Zurlo, A. 2021, ApJ, 916, L2
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- [5] Gemini Planet Imager Spectroscopy of the Dusty Substellar Companion HD 206893 B, Ward-Duong, K., Patience, J., Follette, K., De Rosa, R. J., Rameau, J., Marley, M., Saumon, D., Nielsen, E. L., Rajan, A., Greenbaum, A. Z., Lee, J., Wang, J. J., Czekala, Ian, Duchêne, G., Macintosh, B., Ammons, S. M., Bailey, V. P., Barman, T., Bulger, J., Chen, C., Chilcote, J., Cotten, T., Doyon, R., Esposito, T. M., Fitzgerald, M. P., Gerard, B. L., Goodsell, S. J., Graham, J. R., Hibon, P., Hom, J., Hung, L. W., Ingraham, P., Kalas, P., Konopacky, Q., Larkin, J. E., Maire, J., Marchis, F., Marois, C., Metchev, S., Millar-Blanchaer, M. A., Oppenheimer, R., Palmer, D., Perrin, M., Poyneer, L., Pueyo, L., Rantakyrö, F. T., Ren, B., Ruffio, J. B., Savransky, D., Schneider, A. C., Sivaramakrishnan, A., Song, I., Soummer, R., Tallis, M., Thomas, S., Wallace, J. K., Wiktorowicz, S., and Wolff, S. 2021, AJ, 161, 5
- [6] Molecules with ALMA at Planet-forming Scales (MAPS). I. Program Overview and Highlights, Öberg, K. I., Guzmán, V. V., Walsh, C., Aikawa, Y., Bergin, E. A., Law, C. J., Loomis, R. A., Alarcón, F., Andrews, S. M., Bae, J., Bergner, J. B., Boehler, Y., Booth, A. S., Bosman, A. D., Calahan, J. K., Cataldi, G., Cleeves, L. I., Czekala, Ian, Furuya, K., Huang, J., Ilee, J. D., Kurtovic, N. T., Le Gal, R., Liu, Y., Long, F., Ménard, F., Nomura, H., Pérez, L. M., Qi, C., Schwarz, K. R., Sierra, A., Teague, R., Tsukagoshi, T., Yamato, Y., van't Hoff, M. L. R., Waggoner, A. R., Wilner, D. J., and Zhang, K. 2021, ApJS, 257, 1
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- [9] Molecules with ALMA at Planet-forming Scales (MAPS). IX. Distribution and Properties of the Large Organic Molecules  $HC_3N$ ,  $CH_3CN$ , and c- $C_3H_2$ , Ilee, J. D., Walsh, C., Booth, A. S., Aikawa, Y., Andrews, S. M., Bae, J., Bergin, E. A., Bergner, J. B., Bosman, A. D., Cataldi, G., Cleeves, L. I., **Czekala, Ian**, Guzmán, V. V., Huang, J., Law, C. J., Le Gal, R., Loomis, R. A., Ménard, F., Nomura, H., Öberg, K. I., Qi, C., Schwarz, K. R., Teague, R., Tsukagoshi, T., Wilner, D. J., Yamato, Y., and Zhang, K. 2021, ApJS, 257, 9
- [10] Molecules with ALMA at Planet-forming Scales (MAPS). V. CO Gas Distributions, Zhang, K., Booth, A. S., Law, C. J., Bosman, A. D., Schwarz, K. R., Bergin, E. A., Öberg, K. I., Andrews, S. M., Guzmán, V. V., Walsh, C., Qi, C., van't Hoff, M. L. R., Long, F., Wilner, D. J., Huang, J., Czekala, Ian, Ilee, J. D., Cataldi, G., Bergner, J. B., Aikawa, Y., Teague, R., Bae, J., Loomis, R. A., Calahan, J. K., Alarcón, F., Ménard, F., Le Gal, R., Sierra, A., Yamato, Y., Nomura, H., Tsukagoshi, T., Pérez, L. M., Trapman, L., Liu, Y., and Furuya, K. 2021, ApJS, 257, 5

- [11] Molecules with ALMA at Planet-forming Scales (MAPS). VI. Distribution of the Small Organics HCN, C<sub>2</sub>H, and H<sub>2</sub>CO, Guzmán, V. V., Bergner, J. B., Law, C. J., Öberg, K. I., Walsh, C., Cataldi, G., Aikawa, Y., Bergin, E. A., Czekala, Ian, Huang, J., Andrews, S. M., Loomis, R. A., Zhang, K., Le Gal, R., Alarcón, F., Ilee, J. D., Teague, R., Cleeves, L. I., Wilner, D. J., Long, F., Schwarz, K. R., Bosman, A. D., Pérez, L. M., Ménard, F., and Liu, Y. 2021, ApJS, 257, 6
- [12] Molecules with ALMA at Planet-forming Scales (MAPS). VII. Substellar O/H and C/H and Superstellar C/O in Planet-feeding Gas, Bosman, A. D., Alarcón, F., Bergin, E. A., Zhang, K., van't Hoff, M. L. R., Öberg, K. I., Guzmán, V. V., Walsh, C., Aikawa, Y., Andrews, S. M., Bergner, J. B., Booth, A. S., Cataldi, G., Cleeves, L. I., Czekala, Ian, Furuya, K., Huang, J., Ilee, J. D., Law, C. J., Le Gal, R., Liu, Y., Long, F., Loomis, R. A., Ménard, F., Nomura, H., Qi, C., Schwarz, K. R., Teague, R., Tsukagoshi, T., Yamato, Y., and Wilner, D. J. 2021, ApJS, 257, 7
- [13] Molecules with ALMA at Planet-forming Scales (MAPS). VIII. CO Gap in AS 209-Gas Depletion or Chemical Processing?, Alarcón, F., Bosman, A. D., Bergin, E. A., Zhang, K., Teague, R., Bae, J., Aikawa, Y., Andrews, S. M., Booth, A. S., Calahan, J. K., Cataldi, G., Czekala, Ian, Huang, J., Ilee, J. D., Law, C. J., Le Gal, R., Liu, Y., Long, F., Loomis, R. A., Ménard, F., Öberg, K. I., Schwarz, K. R., van't Hoff, M. L. R., Walsh, C., and Wilner, D. J. 2021, ApJS, 257, 8
- [14] Molecules with ALMA at Planet-forming Scales (MAPS). X. Studying Deuteration at High Angular Resolution toward Protoplanetary Disks, Cataldi, G., Yamato, Y., Aikawa, Y., Bergner, J. B., Furuya, K., Guzmán, V. V., Huang, J., Loomis, R. A., Qi, C., Andrews, S. M., Bergin, E. A., Booth, A. S., Bosman, A. D., Cleeves, L. I., Czekala, Ian, Ilee, J. D., Law, C. J., Le Gal, R., Liu, Y., Long, F., Ménard, F., Nomura, H., Öberg, K. I., Schwarz, K. R., Teague, R., Tsukagoshi, T., Walsh, C., Wilner, D. J., and Zhang, K. 2021, ApJS, 257, 10
- [15] Molecules with ALMA at Planet-forming Scales (MAPS). XI. CN and HCN as Tracers of Photochemistry in Disks, Bergner, J. B., Öberg, K. I., Guzmán, V. V., Law, C. J., Loomis, R. A., Cataldi, G., Bosman, A. D., Aikawa, Y., Andrews, S. M., Bergin, E. A., Booth, A. S., Cleeves, L. I., Czekala, Ian, Huang, J., Ilee, J. D., Le Gal, R., Long, F., Nomura, H., Ménard, F., Qi, C., Schwarz, K. R., Teague, R., Tsukagoshi, T., Walsh, C., Wilner, D. J., and Yamato, Y. 2021, ApJS, 257, 11
- [16] Molecules with ALMA at Planet-forming Scales (MAPS). XII. Inferring the C/O and S/H Ratios in Protoplanetary Disks with Sulfur Molecules, Le Gal, R., Öberg, K. I., Teague, R., Loomis, R. A., Law, C. J., Walsh, C., Bergin, E. A., Ménard, F., Wilner, D. J., Andrews, S. M., Aikawa, Y., Booth, A. S., Cataldi, G., Bergner, J. B., Bosman, A. D., Cleeves, L. I., Czekala, Ian, Furuya, K., Guzmán, V. V., Huang, J., Ilee, J. D., Nomura, H., Qi, C., Schwarz, K. R., Tsukagoshi, T., Yamato, Y., and Zhang, K. 2021, ApJS, 257, 12
- [17] Molecules with ALMA at Planet-forming Scales (MAPS). XIII. HCO+ and Disk Ionization Structure, Aikawa, Y., Cataldi, G., Yamato, Y., Zhang, K., Booth, A. S., Furuya, K., Andrews, S. M., Bae, J., Bergin, E. A., Bergner, J. B., Bosman, A. D., Cleeves, L. I., Czekala, Ian, Guzmán, V. V., Huang, J., Ilee, J. D., Law, C. J., Le Gal, R., Loomis, R. A., Ménard, F., Nomura, H., Öberg, K. I., Qi, C., Schwarz, K. R., Teague, R., Tsukagoshi, T., Walsh, C., and Wilner, D. J. 2021, ApJS, 257, 13
- [18] Molecules with ALMA at Planet-forming Scales (MAPS). XIV. Revealing Disk Substructures in Multiwavelength Continuum Emission, Sierra, A., Pérez, L. M., Zhang, K., Law, C. J., Guzmán, V. V., Qi, C., Bosman, A. D., Öberg, K. I., Andrews, S. M., Long, F., Teague, R., Booth, A. S., Walsh, C., Wilner, D. J., Ménard, F., Cataldi, G., Czekala, Ian, Bae, J., Huang, J., Bergner, J. B., Ilee, J. D., Benisty, M., Le Gal, R., Loomis, R. A., Tsukagoshi, T., Liu, Y., Yamato, Y., and Aikawa, Y. 2021, ApJS, 257, 14
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- [20] Molecules with ALMA at Planet-forming Scales (MAPS). XV. Tracing Protoplanetary Disk Structure within 20 au, Bosman, A. D., Bergin, E. A., Loomis, R. A., Andrews, S. M., van't Hoff, M. L. R., Teague, R., Öberg, K. I., Guzmán, V. V., Walsh, C., Aikawa, Y., Alarcón, F., Bae, J., Bergner, J. B., Booth, A. S., Cataldi, G., Cleeves, L. I., Czekala, Ian, Huang, J., Ilee, J. D., Law, C. J., Le Gal, R., Liu, Y., Long, F., Ménard, F., Nomura, H., Pérez, L. M., Qi, C., Schwarz, K. R., Sierra, A., Tsukagoshi, T., Yamato, Y., Wilner, D. J., and Zhang, K. 2021, ApJS, 257, 15
- [21] Molecules with ALMA at Planet-forming Scales (MAPS). XVI. Characterizing the Impact of the Molecular Wind on the Evolution of the HD 163296 System, Booth, A. S., Tabone, B., Ilee, J. D., Walsh, C., Aikawa, Y., Andrews, S. M., Bae, J., Bergin, E. A., Bergner, J. B., Bosman, A. D., Calahan, J. K., Cataldi, G., Cleeves, L. I., Czekala, Ian, Guzmán, V. V.,

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- [22] Molecules with ALMA at Planet-forming Scales (MAPS). XVII. Determining the 2D Thermal Structure of the HD 163296 Disk, Calahan, J. K., Bergin, E. A., Zhang, K., Schwarz, K. R., Öberg, K. I., Guzmán, V. V., Walsh, C., Aikawa, Y., Alarcón, F., Andrews, S. M., Bae, J., Bergner, J. B., Booth, A. S., Bosman, A. D., Cataldi, G., Czekala, Ian, Huang, J., Ilee, J. D., Law, C. J., Le Gal, R., Long, F., Loomis, R. A., Ménard, F., Nomura, H., Qi, C., Teague, R., van't Hoff, M. L. R., Wilner, D. J., and Yamato, Y. 2021, ApJS, 257, 17
- [23] Molecules with ALMA at Planet-forming Scales (MAPS). XVIII. Kinematic Substructures in the Disks of HD 163296 and MWC 480, Teague, R., Bae, J., Aikawa, Y., Andrews, S. M., Bergin, E. A., Bergner, J. B., Boehler, Y., Booth, A. S., Bosman, A. D., Cataldi, G., Czekala, Ian, Guzmán, V. V., Huang, J., Ilee, J. D., Law, C. J., Le Gal, R., Long, F., Loomis, R. A., Ménard, F., Öberg, K. I., Pérez, L. M., Schwarz, K. R., Sierra, A., Walsh, C., Wilner, D. J., Yamato, Y., and Zhang, K. 2021, ApJS, 257, 18
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#### SUBMITTED AND NON-REFEREED PAPERS

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- [2] Moravec, E., Czekala, Ian, Follette, K., Alpasian, M., Amon, A., Armentrout, W., Arney, G., Barron, D., Bellm, E., Bender, A., Bridge, J., Colon, K., Czekala, Ian, Datta, R., DeRoo, C., Feng, W., Florian, M., Follette, K., Gabriel, T., Hall, K., Hamden, E., Hathi, N., Hawkins, K., Hoadley, K., Jensen-Clem, R., Kao, M., Kara, E., Karkare, K., Kiessling, A., Kimball, A., Kirkpatrick, A., La Plante, P., Leisenring, J., Li, M., Lomax, J., Lund, M., McCleary, J., Mills, E., Montiel, E., Nelson, N., Nevin, R., Norris, R., Ntampaka, M., O'Donnell, C., Peretz, E., Plazas Malagon, A., Prescod-Weinstein, C., Pullen, A., Rice, J., Roettenbacher, R., Sanderson, R., Simon, J., Smith, K. L., Stevenson, K., Veach, T., Wetzel, A., and Youngblood, A. 2019, in Bulletin of the American Astronomical Society, Vol. 51, 8
- [3] The Next Decade of Astroinformatics and Astrostatistics, Siemiginowska, A., Eadie, G., Czekala, Ian, Feigelson, E., Ford, E. B., Kashyap, V., Kuhn, M., Loredo, T., Ntampaka, M., Stevens, A., Avelino, A., Borne, K., Budavari, T., Burkhart, B., Cisewski-Kehe, J., Civano, F., Chilingarian, I., van Dyk, D. A., Fabbiano, G., Finkbeiner, D. P., Foreman-Mackey, D., Freeman, P., Fruscione, A., Goodman, A. A., Graham, M., Guenther, H. M., Hakkila, J., Hernquist, L., Huppenkothen, D., James, D. J., Law, C., Lazio, J., Lee, T., López-Morales, M., Mahabal, A. A., Mandel, K., Meng, X.-L., Moustakas, J., Muna, D., Peek, J. E. G., Richards, G., Portillo, S. K. N., Scargle, J., de Souza, R. S., Speagle, J. S., Stassun, K. G., Stenning, D. C., Taylor, S. R., Tremblay, G. R., Trimble, V., Yanamandra-Fisher, P. A., and Young, C. A. 2019, BAAS, 51, 355

# STUDENTS AND POSTDOCTORAL FELLOWS DIRECTLY SUPERVISED

- Mr. Robert Frazier, Pennsylvania State University Undergraduate Student Regularized Maximum Likelihood Imaging for ALMA with MPoL; Summer 2021
- Mr. Tyler Quinn, Pennsylvania State University Undergraduate Student Regularized Maximum Likelihood Imaging for ALMA with MPoL; May 2021 Dec 2021
- Ms. Hannah Grzybowski, Pennsylvania State University Undergraduate Student Regularized Maximum Likelihood Imaging for ALMA with MPoL; May 2021 Oct 2021
- Mr. Kadri Bin Mohamad Nizam, Pennsylvania State University Graduate Student Variational Autoencoders for Image Reconstruction of Protoplanetary Disks; 2021 - present
- Ms. Brianna Zawadzki, Pennsylvania State University Graduate Student Regularized Maximum Likelihood Imaging for ALMA; 2020 2023
- Ms. Zoe Ko, UC Berkeley Undergraduate Student Sub-Millimeter Selected Spectroscopic Binary Survey; 2019 - 2022
- Mr. Joseph Michael Akana Murphy, Stanford University Coterminal Masters Student Summer Research and Senior Thesis; 2017 - 2019 Unveiling the Spectra of Young Stars with Gaussian Processes: Applications to LkCa 15
- Dr. Jeff Jennings, Penn State University Eberly Postdoctoral Fellow Faculty Advisor, Aug 2022 - present

# INVITED RESEARCH TALKS, PRESENTATIONS, AND PANELS

August 1, 2022	Oxford University, Oxoplanets Journal Club Opportunities for Imaging the Planet Forming Environment with ALMA
Dec 13, 2021	Carnegie Earth and Planets Laboratory (virtual) Opportunities for Imaging the Planet Forming Environment with ALMA
Nov 3, 2021	ML Club debate (virtual), MLclub.net  Machine Learning and Exoplanets
Sep 22, 2021	Pennsylvania State University, Data Science Community Talk (virtual)  Making Images with Radio Interferometers
Sep 1, 2021	Pennsylvania State University, Colloquium (virtual)  Opportunities for Imaging the Planet Forming Environment with ALMA
Jun 9, 2021	AAS 238 Meeting in a Meeting: Current Challenges & the Future of ML in Astronomy Panel <i>Learning responsibly I: Making inference in a world of imperfect models</i>
May 25, 2021	Emerging Researchers in Exoplanet Science (virtual)  Invited panelist for career discussion
May 21, 2021	Joint ALMA Observatory Study Group (virtual) Regularized Maximum Likelihood Imaging for ALMA
April 28, 2021	University of California, Santa Cruz Colloquium (virtual)  Opportunities for Imaging the Planet Forming Environment with ALMA
Dec 11, 2020	Five Years after HL Tau (virtual)  Panelist for General Discussion on disk dynamics and disk multiplicity
Jun 11, 2020	Cambridge University Colloquium, Cambridge, UK  Disks and Dynamics of Protoplanetary Systems
Feb 3, 2020	New Mexico State University Colloquium, Las Cruces, NM Disks and Dynamics of Protoplanetary Systems
Jan 30, 2020	NRAO Colloquium, Charlottesville, VA Disks and Dynamics of Protoplanetary Systems
Jan 27, 2020	Penn State University Colloquium, State College, PA  Disks and Dynamics of Protoplanetary Systems
Dec 9, 2019	San Francisco State University Colloquium, San Francisco, CA  Disks and Dynamics of Protoplanetary Systems
Oct 22, 2019	Frank Bash Symposium, UT Austin, TX  Disks and Dynamics of Protoplanetary Systems
Mar 14, 2019	Department lunch talk, UC Berkeley, CA Circumbinary Planets and Disks
Feb 6, 2019	SOFIA colloquium, NASA Ames, Mountain View, CA The Degree of Alignment of Circumbinary Disks and their Host Binaries
Nov 29, 2018	Weekly seminar, Columbia University, NYC, NY The Alignment of Binary Star Orbits and their Circumbinary Disks
Nov 28, 2018	Stars Meeting, Flatiron Institute, NYC, NY The Alignment of Binary Star Orbits and their Circumbinary Disks
Nov 8, 2018	Sagan Fellows Symposium at Caltech, Pasadena, CA The Alignment of Binary Star Orbits and their Circumbinary Disks
Nov 7, 2018	CIPS Planet and Star Formation Seminar, UC Berkeley, CA The Alignment of Binary Star Orbits and their Circumbinary Disks
Apr 24, 2018	KIPAC Tea Talk at Stanford University, Palo Alto, CA Using Gaussian Processes to Construct Flexible Models of Stellar Spectra
Jan 10, 2018	AAS Special Session on Gaussian Processes and Machine Learning, Washington, D.C.

	Using Gaussian Processes to Construct Flexible Models of Stellar Spectra
Oct 18, 2017	CIPS Planet and Star Formation Seminar, UC Berkeley, CA Protoplanetary Disks around Pre-Main Sequence Binary Stars
June 1, 2017	NAOJ Star and Planet Formation Seminar, NAOJ, Tokyo, Japan Protoplanetary Disks around Pre-Main Sequence Binary Stars
May 31, 2017	RIKEN Star and Planet Formation Seminar, RIKEN, Tokyo, Japan Protoplanetary Disks around Pre-Main Sequence Binary Stars
May 25, 2017	Kavli Institute for Astronomy and Astrophysics Colloquium, Peking University, Beijing, China Protoplanetary Disks around Pre-Main Sequence Binary Stars
May 16, 2017	Harvard Astrostatistics Seminar, Harvard University, Cambridge, MA Disentangling Spectra With Gaussian Processes: Applications to Radial Velocity Analysis
Aug 23, 2016	SAMSI Astrostatistics Opening Workshop, Research Triangle Park, NC Systematics-Dominated Spectroscopic Inference
Jul 20, 2016	ASIAA Colloquium, Taipei, Taiwan The Fundamental Properties of Young Stars
Jul 5, 2016	ASIAA Star Formation Meeting, Taipei, Taiwan  Disk-Based Dynamical Masses and Applications with the SMA
Jun 9, 2016	Kavli Institute for Astronomy and Astrophysics Lunch Seminar, Peking University, Beijing, China <i>The Fundamental Properties of Young Stars</i>
Mar 8, 2016	CfA Exoplanet Lunch, Harvard-Smithsonian Center for Astrophysics <i>Using Protoplanetary Disks to Precisely Weigh Stars</i>
Feb 9, 2016	BU Lunch Talk, Boston University, Boston, MA Using Protoplanetary Disks to Weigh the Youngest Stars and Constrain The Earliest Stages of Stellar Evolution
Dec 10-11, 2015	ISM Seminar at UT Austin, Austin, TX Using Protoplanetary Disks to Weigh the Youngest Stars and Constrain The Earliest Stages of Stellar Evolution
Dec 7-8, 2015	Tea Talk at Caltech, Pasadena, CA Using Protoplanetary Disks to Weigh the Youngest Stars and Constrain The Earliest Stages of Stellar Evolution
Nov 17, 2015	KIPAC Tea Talk at Stanford University, Palo Alto, CA Using Protoplanetary Disks to Weigh the Youngest Stars and Constrain The Earliest Stages of Stellar Evolution
Nov 16, 2015	ACES talk at NASA Ames, Mountain View, CA Using Protoplanetary Disks to Weigh the Youngest Stars and Constrain The Earliest Stages of Stellar Evolution
Nov 12-13, 2015	FLASH talk at UC Santa Cruz, Santa Cruz, CA Using Protoplanetary Disks to Weigh the Youngest Stars and Constrain The Earliest Stages of Stellar Evolution
Nov 4, 2015	CIPS Planet and Star Formation Seminar, UC Berkeley, CA Using Protoplanetary Disks to Weigh the Youngest Stars and Constrain The Earliest Stages of Stellar Evolution
Apr 22, 2015	CIPS Planet and Star Formation Seminar, UC Berkeley, CA Flexible Spectroscopic Inference for Young Stars
Apr 14, 2015	Astrostatistics Seminar, Statistics Department, Harvard University, MA Flexible Spectroscopic Inference

March 29, 20	KITP Program on "Building Bridges: Towards a Unified Picture of Stellar and Black Hole Binary Accretion and Evolution." Collecting observational evidence to understand how protoplanetary circumbinary disks form and evolve
March 16, 20	KITP conference on "Building Bridges: Towards a Unified Picture of Stellar and Black Hole Binary Accretion and Evolution."  Discussion section leader: Observational Tests of Theory
Jan 21, 2021	PSETI Seminar, Pennsylvania State University, PA Introduction to Radio Interferometry with ALMA
Jul 10, 2020 Feb 4-6, 202	
Aug 19-23, 2	Gaussian Process Spectral Models  Extreme Solar Systems IV, Reykjavik, Iceland  The Mutual Inclinations of the Proto-Tatooine Disks
Jul 21-26, 20	·
Jun 28, 2019	Bay Area Exoplanet Meeting, NASA Ames, Mountain View, CA Gradient-based Inference Algorithms for Exoplanet Science
Dec 14, 2018	Bay Area Exoplanet Meeting, NASA Ames, Mountain View, CA The Degree of Alignment between Circumbinary Disks and their Host Binaries
Nov 19-23, 2	2018 Lorentz Center, Leiden, Netherlands  Weighing Stars from Birth to Death Workshop Presentation
Jan 9, 2018	AAS meeting, Washington, D.C.  Mutual Inclinations of Circumbinary Protoplanetary Disks
Dec 13, 2017	Exoplanets and Planet Formation, Shanghai, China Mutual Inclinations of Circumbinary Protoplanetary Disks
Dec 1, 2017	Bay Area Exoplanet Meeting, NASA Ames, Mountain View, CA Mutual Inclinations of Circumbinary Protoplanetary Disks
Aug 22, 201	Exoclipse Conference, Boise State University, Boise, ID  Disentangling Stellar Spectra with Gaussian Processes: Applications to Radial Velocity Analysis
Mar 3, 2017	Bay Area Exoplanet Meeting, NASA Ames, Mountain View, CA Disentangling Stellar Spectra with Gaussian Processes: Applications to Radial Velocity Analysis
Oct 17-28, 2	O16 SAMSI Exoplanet Workshop, Research Triangle Park, NC  Modeling Stellar Spectra with Gaussian Processes
Jan 7, 2016	Dissertation talk, AAS Winter Meeting, Kissimmee, FL Using Protoplanetary Disks to Weigh the Youngest Stars and Constrain The Earliest Stages of Stellar Evolution
Oct 19-21, 2	Fitting Stars, CMDs, and Galaxies, Rockport, MA  Constructing a Likelihood Function for Spectroscopic Inference
Sep 18, 2015	Bay Area Exoplanet Science Meeting, The SETI Institute, Mountain View, CA Using Protoplanetary Disks to Weigh the Youngest Stars and Constrain The Earliest Stages of Stellar Evolution
May 28-29,	2015 Emerging Researchers in Exoplanet Science Symposium, The Pennsylvania State University Accessing the Fundamental Properties of Young Stars
Jun 18-21, 20	ExoStat 2014, Carnegie Mellon University, PA Fitting Stellar Spectra With Some Help From Gaussian Processes
Apr 27, 2012	The Unusually Luminous Extragalactic Nova SN 2010U
Jan 21 - 27, 2	Physics of Astronomical Transients, Aspen Center for Physics, Aspen, CO

	Supernovae Impostors and Pan-STARRS
Jun 28 - 30, 2011	Intermediate Luminosity Red Transients, Space Telescope Science Institute, Baltimore, MD <i>The Unusually Luminous Extragalactic Nova SN 2010U</i>
Apr 16, 2010	ACC Meeting of the Minds Conference, Georgia Institute of Technology Precision Array to Probe the Epoch of Reionization (PAPER) Instrumentation Study
Apr 9 - 10, 2010	AIAA Region I-MA Student Conference, Virginia Institute of Technology Precision Array to Probe the Epoch of Reionization (PAPER) Instrumentation Study

# P.I. GRANTS AND PROPOSALS

Apr 2021	Institute for Computational and Data Sciences seed grant, \$11,500  Variational Autoencoders for Image Reconstruction of Protoplanetary Disks
Mar 2021	ALMA Student Observing support for ALMA program 2019.1.01210.S., \$35,000  Mapping the Inner Edge and Interior Cavity of a Kepler-Analog Circumbinary Protoplanetary Disk
Nov 2020	IRAM 30m project No. 140-20, 2020 - 2021 winter semester, A ranking 13.7 hrs
Oct 2020	ALMA Cycle 8 Development Study Regularized Maximum Likelihood Techniques for ALMA Spectral Line Imaging
	Oct 2020 - 2021, \$167,746
Aug 2019	ALMA Cycle 7: Mapping the Inner Edge and Interior Cavity of a Kepler-Analog Circumbinary Protoplanetary Disk, 4.8 hrs Band 6
Aug 2019	Automated Planet Finder/Lick : <i>Identifying Circumbinary Disk Systems with the APF</i> 3 nights
Aug 2019	Automated Planet Finder/Lick: Dynamical Masses to Set the Ages of Nearby Young Moving Groups 3 nights
Feb 2019	Automated Planet Finder/Lick : <i>Identifying Circumbinary Disk Systems with the APF</i> 4 nights
Feb 2019	Automated Planet Finder/Lick: Dynamical Masses to Set the Ages of Nearby Young Moving Groups 3 nights
Aug 2018	ALMA Cycle 6: <i>Unlocking the TWA 3 Triple System with ALMA</i> 1.3 hrs Band 6
Aug 2018	ALMA Cycle 6: Mapping the Inner Edge of a Kepler-Analog Circumbinary Protoplanetary Disk
Aug 2016	5.7 hrs Band 6 ALMA Cycle 4: Resolving the AK Sco Circumbinary Disk
Oct 2014	1 hour Band 6 CfA Optical and Infrared division: <i>Pre-Main Sequence Models</i>
Jun 2014	1 night on Magellan/MIKE CfA Optical and Infrared division: <i>Determining the Systematic Error of Veiling</i> 3 nights each on 1.5m/TRES and 1.2m/Keplercam
Oct 2013	CfA Optical and Infrared division: <i>Pre-Main Sequence Models</i> 1 night on Magellan/MIKE
Jun 2013	CfA Optical and Infrared division: <i>Pre-Main Sequence Models</i> 3 nights each on 1.5m/TRES and 1.2m/Keplercam

## WORKSHOPS AND CONFERENCES

Dec 5 - 9, 2022	exoALMA ALMA LP meeting, Boston, MA, USA
May 23 - 27, 2022	exoALMA ALMA LP meeting, Milan, Italy
Jan 21 - 24, 2020	MAPS ALMA LP meeting, CfA   Harvard and Smithsonian, Cambridge, MA
Oct 21 - 25, 2019	Visualizing the Kinematics of Planet Formation, Flatiron Institute, NYC
Jun 23 - 28, 2013	Gordon Research Conference on Origins of Solar Systems, Mount Holyoke, MA
May 29 - Jun 5, 2012	NRAO Summer School on Interferometry and Aperture Synthesis, Socorro, NM
Sept 14 - 16, 2011	NRAO CASA Reduction Workshop, Socorro, NM
Sept 18 - 21, 2011	PAN-STARRS Science Consortium Meeting, Cambridge, MA
Aug 24 - 25, 2011	Derek Bok Teaching Conference, Harvard University, Cambridge, MA
Sept 22, 2009	The Fourth North American ALMA Science Center Conference, Charlottesville, VA

## **OPEN SOURCE CODE PACKAGES**

MPoL Regularized Maximum Likelihood Imaging for ALMA

https://mpol-dev.github.io/MPoL/

visread Visibility Reading Tools for Radio Astronomy

https://mpol-dev.github.io/visread/

PSOAP Disentangling of Stellar Spectra for Radial Velocity Analysis

https://github.com/iancze/PSOAP

ASCL: http://adsabs.harvard.edu/abs/2017ascl.soft05013C

DiskJockey UV plane modeling of sub-mm interferometric protoplanetary disk observations

https://github.com/iancze/DiskJockey

ASCL: http://adsabs.harvard.edu/abs/2016ascl.soft03011C

Starfish Modular tools for spectroscopic inference

http://iancze.github.io/Starfish/

ASCL: http://adsabs.harvard.edu/abs/2015ascl.soft05007C

# **OBSERVING EXPERIENCE**

Magellan Clay 6.5 Meter, Las Campanas Observatory, Chile

Jul 3-4, 2015	MIKE Pre-Main Sequence Models
May 22-23, 2014	MIKE Pre-Main Sequence Models
0 -1 20 21 2011	IDCC 2 and Mac CDD back relacit

Oct 20-21, 2011 LDSS-3 and MagE GRB host galaxies and supernovae candidates from Pan-STARRS

Jan 11-12, 2011 LDSS-3 GRB host galaxies and supernovae candidates from Pan-STARRS

Multiple Mirror Telescope 6.5 Meter, Fred Lawrence Whipple Observatory, Arizona

Nov 26-28, 2011	BlueChannel Pan-STARRS supernova and variable stars
Feb 21-23, 2011	BlueChannel Pan-STARRS supernova and variable stars

## Commissioning

Jun - Aug, 2012 MMTCam commissioning and installation at MMT

# The Submillimeter Array Interferometer, Mauna Kea, Hawaii

Feb 20-24, 2014	SMA queue observing
Nov 6 - 10, 2014	SMA queue observing
Jan 14 - 20, 2015	SMA queue observing

Gemini Planet Imager (GPI), Gemini South, Chile

Nov 16-18, 2016 GPI Exoplanet Survey

IRAM 30m (mm-wave), Pico Veleta, Spain

Apr 28 - May 1, 2021 IRAM 30m (project No. 140-20), 13.7 hrs

# **TEACHING**

Jan - Apr 2023	Professor, Astro 6 (undergraduate general education): Stars, Galaxies, and the Universe
	Pennsylvania State University
Aug - Dec 2022	Professor, Astro 589 (graduate astrophysics)
	Radio Astronomy and Interferometric Imaging (website)
	Pennsylvania State University
Aug - Dec 2021	Professor, Astro 542 (graduate astrophysics)
	The Interstellar Medium and Star Formation (website)
	Pennsylvania State University
Aug - Dec 2020	Professor, Astro 6 (undergraduate general education): Stars, Galaxies, and the Universe
	Pennsylvania State University
Jan - May 2013	Teaching Fellow, AY 193: Noise and Data Analysis in Astrophysics
	Bok Center Certificate of Distinction in Teaching
	Wrote and delivered two class lectures
Jan - May 2013	AY302: Scientists Teaching Science, taught by Dr. Phil Sadler
Sep - Dec 2012	Teaching Fellow, AY 17: Galaxies and Cosmology
	Bok Center Certificate of Distinction in Teaching

# PROFESSIONAL SERVICE AND OUTREACH

May 2023	PSU Comprehensive Exam Committee Member, Kaylee De Soto
May 2023	PSU Ph.D. Thesis Committee Member, Arvind Gupta
Dec 2022 - Jan 2023	CEHW postdoctoral fellowship committee
Dec 2022 Juli 2023	PSU Astronomy Graduate Admissions Preliminary Reviewer
Fall 2022	PSU 51 Peg b Postdoctoral fellowship committee
Fall 2022 - present	Center for Astrostatistics Lunch Seminar Co-Organizer
Fall 2022 - Feb 2023	Comprehensive Exam Committee Member, Andrew Pellegrino
Fall 2022 - present	Penn State Astrophysics Colloquium Committee
Fall 2022 - present	Penn State ECoS Sustainability Council Astrophysics Representative
Fall 2022 - present	Penn State Astrophysics Climate and Diversity Committee
Fall 2022 - present	Penn State Astrophysics Hobby Eberly Telescope TAC
Fall 2022 - present	Graduate Student Mentor (PSU graduate student)
Oct 2022	Comprehensive Exam Committee Member, Nicholas Tusay
May 2022	ALMA Large Program External Reviewer
Sep 2021 - May 2022	Academic Advisor (PSU graduate student)
Sep 2021 - May 2022	Astronomy and Astrophysics faculty search committee
Sep 2021 - May 2022	PSU Astronomy Graduate Admissions Committee
Dec 2021 - Jan 2022	CEHW Postdoctoral Fellowship Committee Member
Apr 2021	Pennsylvania State University Eberly College of Science, faculty search committee
Feb 2021	JWST Cycle 1 Time Allocation panelist, exoplanets and disks
Jan 2021	Eberly Postdoctoral Fellowship interview panelist
May 2021 - May 2023	
Jan 2021 - May 2023	PSU Ph.D. Thesis Committee Member, Macy Huston
Dec 2020 - Feb 2021	Ph.D. Thesis Committee Member, Alan Reyes
Dec 2020	Comprehensive Exam Committee Member, Macy Huston (PSU)
Oct 2020 - present	Ph.D. Thesis Committee Member, Elizabeth Melton
Sep 2020 - present	PSU Astronomy Graduate Admissions Committee
Aug 2020 - present	PSU Astronomy Development and Alumni Relations Committee
Mar 2020	TESS Cycle 3 GO Time Allocation Committee Panelist
Jan 2020 - present Sep 2019 - Mar 2020	Referee for MNRAS  Regression organizar
29 Apr - 2 May, 2019	Berkeley ExoCoffeeTea arXiv discussion organizer AURA Future Leader
Fall 2018	NAS Astro2020 Early Career Decadal Survey Focus Session Participant
2017 - 2018	Stanford KIPAC Colloquium Committee
Aug 2016	Montauk Observatory Public Lecture, Montauk, NY
1146 2010	East End Dark Skies Spark a Career in Astrophysics
Dec 2016	Bay Area Exoplanet Meeting LOC
2016 - present	Referee for the Astrophysical Journal
2013 - 2015	Harvard Astronomy Department Peer mentor
2012 - 2013	Harvard Undergrad Observing Project (HOP) volunteer
Apr 28, 2012	Cambridge Explores the Universe, volunteer
Sep 2011 - Mar 2012	Braintree High School Science Fair Mentor with students
	Mr. Joshua Kelleher and Mr. Brendan Newell
Feb 2011 - Feb 2012	Fauquier County Light Pollution High School Science Project Mentor
	with student Ms. Virginia Johnson
Feb 8, 2012	High Science Fair Judge, East Boston High School
Oct 26, 2011	Science in the News (SITN) Public Lecture,
	The Chemical Enrichment of the Universe, Boston, MA
Jul 2011 - 2015	Library Committee Graduate Student Representative,
D	Harvard-Smithsonian CfA Wolbach Library
Dec 2010 - 2015	Astrobites (daily astrophysical literature journal) co-founder and contributing author
Oct 2009 - Apr 2010	Dark Skies, Bright Kids science program, Central Virginia

#### **SELECTED POSTERS**

6. The Degree of Alignment Between Circumbinary Disks and their Host Binaries

**Ian Czekala**, E. Chiang, S. M. Andrews, E. L. N. Jensen, G. Torres, D. J. Wilner, K. G. Stassun, & B. Macintosh New Horizons in Planetary Systems, Victoria, BC, Canada. May 13-17, 2019

5. Using Protoplanetary Disks to Weigh the Youngest Stars and Constrain The Earliest Stages of Stellar Evolution

Ian Czekala, S. M. Andrews, E. L. N. Jensen, K. G. Stassun, D. Latham, D. J. Wilner, & G. Torres Extreme Solar Systems III Conference, Waikoloa Village, HI, Nov 29 - 4, 2015

4. *A Disk-based Dynamical Mass Estimate for the Young Binary AK Sco* **Ian Czekala**, S. M. Andrews, E. L. N. Jensen, K. G. Stassun, G. Torres, & D. J. Wilner 2015 Gordon Research Conference on Origins of Solar Systems, Mount Holyoke, MA

3. A Novel Tool for the Spectroscopic Inference of Fundamental Stellar Parameters Czekala, Ian; Andrews, Sean M.; Latham, David W.; Torres, Guillermo Summer AAS Meeting #224 #322.01, Boston, MA

2. The Unusually Luminous Extragalactic Nova SN 2010U

Czekala, Ian; Chornock, R.; Berger, E.; Pastorello, A.; Marion, G. H.; Challis, P.; Wheeler, J. C.; Botticella, M. T.; Smartt, S.; Ergon, M.; Sollerman, J.

American Astronomical Society, AAS Meeting #218, #127.11; Vol. 43, 2011

1. Truncated Disks in TW Hya Association Multiple Star Systems

Czekala, Ian; Andrews, Sean

American Astronomical Society, AAS Meeting #215, #428.05; Vol. 42, p.345 awarded **Chambliss Student Achievement Award** 

#### COLLABORATIVE POSTERS

2. Snapshots of the Universe: A Multi-Lingual Astronomy Art Book

Beaton, Rachael; Jackson, L.; Carlberg, J.; Johnson, K.; Marchand, R.; Sivakoff, G.; **Czekala, I.**; Damke, G.; Dean, J.; Drosback, M.; Gugliucci, N.; Martinez, O.; Wong, A.; Zasowski, G.; Skies, Dark; Kids, Bright American Astronomical Society, AAS Meeting #220, #437.13

1. Astrobites: The Astro-ph Reader's Digest For Undergraduates

Sanders, Nathan; Newton, E. R.; **Czekala, I.**; Rosenfeld, K.; Dressing, C. D.; Gifford, D.; Suresh, J.; Schneider, E.; Morley, C.; Kohler, S.

American Astronomical Society, AAS Meeting #218, #333.11; Bulletin of the American Astronomical Society, Vol. 43, 2011

#### REFERENCES

Professor Eugene Chiang University of California at Berkeley (echiang@astro.berkeley.edu)

Professor Bruce Macintosh Stanford University (bmacintosh@stanford.edu)

Dr. Sean M. Andrews Center for Astrophysics | Harvard and Smithsonian (sandrews@cfa.harvard.edu)

Professor Eric L. N. Jensen Swarthmore College (ejensen1@swarthmore.edu)
Dr. Kaisey Mandel University of Cambridge IfA (kmandel@ast.cam.ac.uk)

Dr. David Latham Center for Astrophysics | Harvard and Smithsonian (dlatham@cfa.harvard.edu)
Professor James Moran Center for Astrophysics | Harvard and Smithsonian (jmoran@cfa.harvard.edu)

Professor Kelsey Johnson University of Virginia (kej7a@virginia.edu)