

# Adam R. Tomczak

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## Research Interests

Galaxy evolution: stellar mass, star-formation, galaxy environment, large optical-infrared surveys

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## Education

<b>Texas A&amp;M University</b> , College Station, Texas	2009 - 2015
M.S., Ph.D. - Physics	
Advisor: Dr. Kim-Vy Tran	
Dissertation: <i>Tracking the Stellar Mass Growth of Galaxies Since 2 Gyr after the Big Bang</i>	
Master's Thesis: <i>A Census of Mid-infrared-selected Active Galactic Nuclei in Massive Galaxy Clusters at <math>0 &lt; z &lt; 1.3</math></i>	2012
<b>Rutgers University</b> , New Brunswick, New Jersey	2005 - 2009
B.S. - Astrophysics, <i>cum Laude</i>	

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## Positions

<b>University of California, Davis</b>	Postdoctoral Researcher	2015 - present
<b>Texas A&amp;M University</b>	Graduate Research Assistant	2009 - 2015

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## Professional Experience

<u>NRAO Science Review Panel</u>	2017 – present
<i>Evaluate and discuss the merits and potential scientific impact of observing proposals for the GBT, VLA, and VLBA.</i>	
<u>Cosmology Seminar Organizer</u>	2016 – present
<i>Organize the Cosmology Seminar Series at UC Davis involving: Contacting potential speakers, scheduling visits, moderating presentations, and corresponding with logistics.</i>	
<u>TMT Future Leaders Workshop</u>	2016
<i>A workshop devoted to training young scientists and engineers skills in project development and team management necessary for the future in astronomy with the Thirty Meter Telescope (TMT).</i>	
<u>ISEE: Professional Development Program</u>	2015
<i>A workshop series, organized and run by the Institute for Scientist and Engineer Educators (ISEE) dedicated to training aspiring academics in modern and innovative pedagogical techniques.</i>	

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## Skills

Working knowledge of UNIX, Python, IDL, GitHub  
Experience using supercomputing clusters with SLURM

## Teaching and Outreach

<u>Teaching Assistant</u> , Texas A&M University <i>Designed weekly discussion sessions, special topics lectures, homework and quizzes, directed weekly lab sessions, grading.</i>	2009 – 2013
ASTR 101 – Basic Astronomy ASTR 102 – Observational Astronomy ASTR 111 – Overview of Modern Astronomy	
<u>Texas A&amp;M Star Parties</u> <i>Operated telescopes and led discussions of astronomical topics for college students and the general public.</i>	2010 – 2014
<u>Texas A&amp;M University Annual Physics &amp; Engineering Festival</u> <i>Ran and explained physics demonstrations for families and students from elementary through high school.</i>	2010 – 2014
<u>Texas Science Olympiad</u> <i>Volunteer proctor and judge at an academic competition for middle school students.</i>	2013
<u>Mitchell Institute Undergraduate Research Mentor</u> <i>Mentored undergraduates through astronomical research projects for academic credit at Texas A&amp;M University.</i>	
Whitman Howard: 2013 Adam Broussard: 2013 – 2014	

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## Conferences and Presentations

Talk	<u>UC Davis Cosmology Seminar Series</u>	Davis, CA	February 2018
Talk	<u>Keck Science Meeting</u>	Santa Cruz, CA	September 2017
Talk	<u>Deconstructing Galaxies at Cosmic Noon</u>	Leiden, Netherlands	August 2016
Talk	<u>American Astronomical Society 225<sup>th</sup> Meeting</u>	Seattle, WA	January 2015
Talk	<u>Friday Scientific Lunch Talks Seminar</u>	Tucson, AZ	November 2014
Talk	<u>ZFOURGE Group Workshop</u>	Cook's Branch, TX	October 2014
Talk	<u>American Physical Society Meeting 59 #12</u>	College Station, TX	October 2014
Talk	<u>ZFOURGE Group Workshop</u>	Sydney, Australia	April 2014
Poster	<u>The Near-Field Deep-Field Connection</u>	Irvine, CA	February 2014
Poster	<u>American Astronomical Society 223<sup>rd</sup> Meeting</u>	Washington D.C.	January 2014
Talk	<u>ZFOURGE Group Workshop</u>	Cook's Branch, TX	October 2013
Poster	<u>Frank N. Bash Symposium</u>	Austin, TX	October 2013
Talk	<u>ZFOURGE Group Workshop</u>	Pasadena, CA	May 2013
Poster	<u>American Astronomical Society 219<sup>th</sup> Meeting</u>	Austin, TX	January 2012
Poster	<u>Structure in Clusters and Groups of Galaxies</u>	Boston, MA	July 2011
Poster	<u>American Astronomical Society 217<sup>th</sup> Meeting</u>	Seattle, WA	January 2011

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## Observing Experience

CTIO	Blanco 4m	NEWFIRM	5 nights
McDonald	H. J. Smith	VIRUS-P	5 nights
Gemini	Gemini South	GMOS-S	3 nights
Keck	Keck I	MOSFIRE	4 nights
Subaru	Subaru	Suprime-Cam	2 nights

## References

Professor Lori M. Lubin  
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Texas A&M University  
Department of Physics and Astronomy  
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Department of Physics  
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## Publications

### First Author:

1. *Glimpsing the Imprint of Local Environment on the Galaxy Stellar Mass Function*  
2017, MNRAS, 472, 3512  
**Tomczak, A. R.**, Lemaux, B. C., Lubin, L. M., Gal, R. R., Wu, P.-F., Holden, B., Kocevski, D. D., Mei, S., Pelliccia, D., Rumbaugh, N., Shen, L.
2. *The SFR- $M_*$  Relation and Empirical Star-formation Histories from ZFOURGE at  $0.5 < z < 4$*   
2016, ApJ, 817, 118  
**Tomczak, A. R.**, Quadri, R. F., Tran, K.-V. H., Labbé, I., Straatman, C. M. S., Papovich, C., Glazebrook, K., Allen, R., Brammer, G., Cowley, M., Dickinson, M., Elbaz, D., Inami, H., Kacprzak, G., Morrison, G., Nanayakkara, T., Persson, S. E., Rees, G. A., Salmon, B., Schreiber, C., Spitler, L. R., Whitaker, K. E.
3. *Galaxy Stellar Mass Functions from ZFOURGE/CANDELS: An Excess of Low-mass Galaxies since  $z=2$  and the Rapid Buildup of Quiescent Galaxies*  
2014, ApJ, 783, 85  
**Tomczak, A. R.**, Quadri, R. F., Tran, K.-V. H., Labbé, I., Straatman, C. M. S., Papovich, C., Glazebrook, K., Allen, R., Brammer, G. B., Kacprzak, G. G., Kawinwanichakij, L., Kelson, D. D., McCarthy, P. J., Mehtens, N., Monson, A. J., Persson, S. E., Spitler, L. R., Tilvi, V., van Dokkum, P.
4. *A Census of Mid-infrared-selected Active Galactic Nuclei in Galaxy Clusters at  $0 < z < 1.3$*   
2011, ApJ, 738, 65  
**Tomczak, A. R.**, Tran, K.-V. H., Saintonge, A.

### Coauthor:

1. *The properties of radio galaxies and the effect of environment in large-scale structures at  $z \sim 1$*   
2017, MNRAS, 472, 998  
Shen, L., Miller, N. A., Lemaux, B. C., **Tomczak, A. R.**, Lubin, L. M., Rumbaugh, N., Fassnacht, C. D., Becker, R. H., Gal, R. R., Wu, P.-F., Squires, G. K.
2. *Chronos and KAIROS: MOSFIRE observations of post-starburst galaxies in  $z \sim 1$  clusters and groups*  
2017, MNRAS, 472, 419  
Lemaux, B. C., **Tomczak, A. R.**, Lubin, L. M., Wu, P.-F., Gal, R. R., Rumbaugh, N., Kocevski, D. D., Squires, G. K.
3. *Decoupled Black Hole Accretion and Quenching: The Relationship Between BHAR, SFR, and Quenching in Milky Way and Andromeda-mass Progenitors Since  $z = 2.5$*   
2017, MNRAS, stx2587  
Cowley, M., Spitler, L., Quadri, R. F., Goulding, A. D., Papovich, C., Tran, K.-V., Labbé, I., Alcorn, L., Allen, R., Forrest, B., Glazebrook, K., Kacprzak, G., Morrison, G., Nanayakkara, T., Straatman, C. M. S., **Tomczak, A. R.**
4. *Effect of Local Environment and Stellar Mass on Galaxy Quenching and Morphology at  $0.5 < z < 2$*   
2017, ApJ, 847, 134  
Kawinwanichakij, L., Papovich, C., Quadri, R. F., Glazebrook, K., Kacprzak, G. G., Allen, R., Bell, E. F., Croton, D. J., Dekel, A., Ferguson, H. C., Forrest, B., Grogan, N. A., Guo, Y., Kocevski, D. D., Koekemoer, A. M., Labbé, I., Lucas, R. A., Nanayakkara, T., Spitler, L. R., Straatman, C. M. S., Tran, K.-V. H., **Tomczak, A. R.**, van Dokkum, P.

5. *Suppressed star formation by a merging cluster system*  
2017, MNRAS, 469, 20  
Mansheim, A. S., Lemaux, B. C., **Tomczak, A. R.**, Lubin, L. M., Rumbaugh, N., Wu, P.-F., Gal, R. R., Shen, L., Dawson, W. A., Squires, G. K.
6. *ZFIRE: using H $\alpha$  equivalent widths to investigate the in situ initial mass function at  $z \sim 2$*   
2017, MNRAS, 468, 3071  
Nanayakkara, T., Glazebrook, K., Kacprzak, G. G., Yuan, T., Fisher, D., Tran, K.-V., Kewley, L. J., Spitler, L., Alcorn, L., Cowley, M., Labbé, I., Straatman, C., **Tomczak, A.**
7. *X-ray-emitting active galactic nuclei from  $z = 0.6$  to  $1.3$  in the intermediate- and high-density environments of the ORELSE survey*  
2017, MNRAS, 466, 496  
Rumbaugh, N., Lemaux, B. C., **Tomczak, A.**, Kocevski, D. D., Lubin, L. M., Wu, P.-F., Gal, R. R., Shen, L., Mansheim, A., Fassnacht, C. D., Squires, G. K.
8. *Discovery of Extreme [O III]+H $\beta$  Emitting Galaxies Tracing an Overdensity at  $z \sim 3.5$  in CDF-South*  
2017, ApJ, 838, 12  
Forrest, B., Tran, K.-V. H., Broussard, A., Allen, R. J., Apfel, M., Cowley, M. J., Glazebrook, K., Kacprzak, G. G., Labbé, I., Nanayakkara, T., Papovich, C., Quadri, R. F., Spitler, L. R., Straatman, C. M. S., **Tomczak, A.**
9. *ZFIRE: Similar Stellar Growth in H $\alpha$ -emitting Cluster and Field Galaxies at  $z \sim 2$*   
2017, ApJ, 834, 101  
Tran, K.-V. H., Alcorn, L. Y., Kacprzak, G. G., Nanayakkara, T., Straatman, C., Yuan, T., Cowley, M., Davé, R., Glazebrook, K., Kewley, L. J., Labbé, I., Martizzi, D., Papovich, C., Quadri, R., Spitler, L. R., **Tomczak, A.**
10. *The FourStar Galaxy Evolution Survey (ZFOURGE): Ultraviolet to Far-infrared Catalogs, Medium-bandwidth Photometric Redshifts with Improved Accuracy, Stellar Masses, and Confirmation of Quiescent Galaxies to  $z \sim 3.5$*   
2016, ApJ, 830, 51  
Straatman, C. M. S., Spitler, L. R., Quadri, R. F., Labbé, I., Glazebrook, K., Persson, S. E., Papovich, C., Tran, K.-V. H., Brammer, G. B., Cowley, M., **Tomczak, A.**, Nanayakkara, T., Alcorn, L., Allen, R., Broussard, A., van Dokkum, P., Forrest, B., van Houdt, J., Kacprzak, G. G., Kawinwanichakij, L., Kelson, D. D., Lee, J., McCarthy, P. J., Mehtens, N., Monson, A., Murphy, D., Rees, G., Tilvi, V., Whitaker, K. E.
11. *ZFIRE: A KECK/MOSFIRE Spectroscopic Survey of Galaxies in Rich Environments at  $z \sim 2$*   
2016, ApJ, 828, 21  
Nanayakkara, T., Glazebrook, K., Kacprzak, G. G., Yuan, T., Tran, K.-V., Spitler, L., Kewley, L., Straatman, C., Cowley, M., Fisher, D., Labbé, I., **Tomczak, A.**, Allen, R., Alcorn, L.
12. *Cold-mode Accretion: Driving the Fundamental Mass–Metallicity Relation at  $z \sim 2$*   
2016, ApJL, 826, 11  
Kacprzak, G. G., van de Voort, F., Glazebrook, K., Tran, K.-V. H., Yuan, T., Nanayakkara, T., Allen, R. J., Alcorn, L., Cowley, M., Labbé, I., Spitler, L., Straatman, C., **Tomczak, A.**
13. *ZFIRE: The Kinematics of Star-forming Galaxies as a Function of Environment at  $z \sim 2$*   
2016, ApJL, 825, 2  
Alcorn, L. Y., Tran, K.-V. H., Kacprzak, G. G., Nanayakkara, T., Straatman, C., Yuan, T., Allen, R. J., Cowley, M., Davé, R., Glazebrook, K., Kewley, L. J., Labbé, I., Quadri, R., Spitler, L. R., **Tomczak, A.**

14. *ZFOURGE catalogue of AGN candidates: an enhancement of 160- $\mu$ m-derived star formation rates in active galaxies to  $z = 3.2$*   
2016, MNRAS, 457, 629  
Cowley, M. J., Spitler, L. R., Tran, K.-V. H., Rees, G. A., Labbé, I., Allen, R. J., Brammer, G. B., Glazebrook, K., Hopkins, A. M., Juneau, S., Kacprzak, G. G., Mullaney, J. R., Nanayakkara, T., Papovich, C., Quadri, R. F., Straatman, C. M. S., **Tomczak, A. R.**, van Dokkum, P. G.
15. *Z-FIRE: ISM properties of the  $z = 2.095$  COSMOS Cluster*  
2015, ApJ, 819, 100  
Kewley, L. J., Yuan, T., Nanayakkara, T., Kacprzak, G. G., Tran, K.-V. H., Glazebrook, K., Spitler, L. R., Cowley, M., Dopita, M., Straatman, C. M. S., Labbé, I., **Tomczak, A. R.**
16. *Z-FIRE: Galaxy Cluster Kinematics, H $\alpha$  Star Formation Rates, and Gas Phase Metallicities of XMM-LSS J02182-05102 at  $z = 1.6232$*   
2015, ApJ, 811, 28  
Tran, K.-V. H., Nanayakkara, T., Yuan, T., Kacprzak, G. G., Glazebrook, K., Kewley, L. J., Momcheva, I., Papovich, C., Quadri, R. F., Rudnick, G., Saintonge, A., Spitler, L., Straatman, C. M. S., **Tomczak, A. R.**
17. *The Sizes of Massive Quiescent and Star-forming Galaxies at  $z \sim 4$  with ZFOURGE and CANDELS*  
2015, ApJL, 808 29  
Straatman, C. M. S., Labbé, I., Spitler, L. R., Glazebrook, K., **Tomczak, A. R.**, Allen, R., Brammer, G. B., Cowley, M., van Dokkum, P., Kacprzak, G. G., Kawinwanichakij, L., Mehrrens, N., Nanayakkara, T., Papovich, C., Persson, S. E., Quadri, R. F., Rees, G., Tilvi, V., Tran, K.-V. H., Whitaker, K. E.
18. *The Differential Size Growth of Field and Cluster Galaxies at  $z = 2.1$  Using the ZFOURGE Survey*  
2015, ApJ, 806, 3  
Allen, R. J., Kacprzak, G. G., Spitler, L. R., Glazebrook, K., Labbé, I., Tran, K.-V. H., Straatman, C. M. S., Nanayakkara, T., Brammer, G. B., Quadri, R. F., Cowley, M., Monson, A., Papovich, C., Persson, S. E., Rees, G., Tilvi, V., **Tomczak, A. R.**
19. *The Absence of an Environmental Dependence in the Mass-Metallicity Relation at  $z = 2$*   
2015, ApJL, 802, 26  
Kacprzak, G. G., Yuan, T., Nanayakkara, T., Kobayashi, C., Tran, K.-V. H., Kewley, L. J., Glazebrook, K., Spitler, L. R., Taylor, P., Cowley, M., Labbé, I., Straatman, C. M. S., **Tomczak, A. R.**
20. *ZFOURGE/CANDELS: On the Evolution of  $M^*$  Galaxy Progenitors from  $z=3$  to 0.5*  
2015, ApJ, 803, 26  
Papovich, C., Labbé, I., Quadri, R., Tilvi, V., Behroozi, P., Bell, E. F., Glazebrook, K., Spitler, L., Straatman, C. M. S., Tran, K.-V., Cowley, M., Davé, R., Dekel, A., Dickinson, M., Ferguson, H., Finkelstein, S. L., Gawiser, E., Inami, H., Faber, S. M., Kacprzak, G. G., Kawinwanichakij, L., Kocevski, D., Koekemoer, A., Koo, D. C., Kurczynski, P., Lotz, J. M., Lu, Y., Lucas, R. A., McIntosh, D., Mehrrens, N., Mobasher, B., Monson, A., Morrison, G., Nanayakkara, T., Persson, S. E., Salmon, B., Simons, R., **Tomczak, A.**, van Dokkum, P., Weiner, B., Willner, S.
21. *Keck/MOSFIRE Spectroscopic Confirmation of a Virgo-like Cluster Ancestor at  $z = 2.095$*   
2014, ApJ, 795, 20  
Yuan, T., Nanayakkara, T., Kacprzak, G. G., Tran, K.-V. H., Glazebrook, K., Kewley, L. J., Spitler, L. R., Poole, G. B., Labbé, I., Straatman, C. M. S., **Tomczak, A. R.**

22. *The Distribution of Satellites around Massive Galaxies at  $1 < z < 3$  in ZFOURGE/CANDELS: Dependence on Star Formation Activity*  
2014, ApJ, 792, 103  
Kawinwanichakij, L., Papovich, C., Quadri, R. F., Tran, K.-V. H., Spitler, L. R., Kacprzak, G. G., Labbé, I., Straatman, C. M. S., Glazebrook, K., Allen, R., Cowley, M., Davé, R., Dekel, A., Ferguson, H. C., Hartley, W. G., Koekemoer, A. M., Koo, D. C., Lu, Y., Mehrtens, N., Nanayakkara, T., Persson, S. E., Rees, G., Salmon, B., Tilvi, V., **Tomczak, A. R.**, van Dokkum, P.
23. *Exploring the  $z = 3-4$  Massive Galaxy Population with ZFOURGE: The Prevalence of Dusty and Quiescent Galaxies*  
2014, ApJ, 787, 36  
Spitler, L. R., Straatman, C. M. S., Labbé, I., Glazebrook, K., Tran, K.-V. H., Kacprzak, G. G., Quadri, R. F., Papovich, C., Persson, S. E., van Dokkum, P., Allen, R., Kawinwanichakij, L., Kelson, D., McCarthy, P. J., Mehrtens, N., Monson, A. J., Nanayakkara, T., Rees, G., Tilvi, V., **Tomczak, A. R.**
24. *A Substantial Population of Massive Quiescent Galaxies at  $z \sim 4$  from ZFOURGE*  
2014, ApJ, 783, 14  
Straatman, C. M. S., Labbé, I., Spitler, L. R., Allen, R., Altieri, B., Brammer, G. B., Dickinson, M., van Dokkum, P., Inami, H., Glazebrook, K., Kacprzak, G. G., Kawinwanichakij, L., Kelson, D. D., McCarthy, P. J., Mehrtens, N., Monson, A., Murphy, D., Papovich, C., Persson, S. E., Quadri, R., Rees, G., **Tomczak, A.**, Tran, K.-V. H., Tilvi, V.
25. *The evolution of the star formation activity per halo mass up to redshift  $\sim 1.6$  as seen by Herschel*  
2012, A&A, 537, A58  
Popesso, P., Biviano, A., Rodighiero, G., Baronchelli, I., Salvato, M., Saintonge, A., Finoguenov, A., Magnelli, B., Gruppioni, C., Pozzi, F., Lutz, D., Elbaz, D., Altieri, B., Andreani, P., Aussel, H., Berta, S., Capak, P., Cava, A., Cimatti, A., Coia, D., Daddi, E., Dannerbauer, H., Dickinson, M., Dasyra, K., Fadda, D., Förster Schreiber, N., Genzel, R., Hwang, H. S., Kartaltepe, J., Ilbert, O., Le Floch, E., Leiton, R., Magdis, G., Nordon, R., Patel, S., Poglitsch, A., Riguccini, L., Sanchez Portal, M., Shao, L., Tacconi, L., **Tomczak, A.**, Tran, K., Valtchanov, I.