

# Christian Aganze

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🌐 <https://caganze.github.io>

## Education

- 2016 – May 2023 (anticipated)    📌 **PhD Candidate** Physics, UC San Diego, CA  
Thesis title: *Galactic Archeology with Ultracool Dwarfs*  
Advisor: Prof. Adam Burgasser
- 2012 – 2016    📌 **B.Sc. Physics**, Morehouse College, Atlanta, GA

## Research, Mentoring and Teaching Experience

- 2021–    📌 **Research Mentor of UCSD undergraduates and other undergraduates from the ENLACE program** UC San Diego
- 2019–2021    📌 **Teaching Assistant for Physics 5, 1A& 1AL** UC San Diego
- 2016 –    📌 **Graduate Student Researcher**, UC San Diego
- 2018–2020    📌 **The Large Synoptic Survey Telescope (LSST) Data Science Fellowship**
- 2014 – 2016    📌 **Undergraduate Student Researcher**, UC San Diego

## Publications

### First-author, Peer-reviewed Articles

- 1    **Aganze, C.,** Burgasser, A. J., Malkan, M. A., Theissen, C. A., Tejada Arevalo, R. A., Hsu, C.-C., ... Holwerda, B. W. (2022, April). *Beyond the Local Volume II: Population Scaleheights and Ages of Ultracool Dwarfs in Deep HST/WFC3 Parallel Fields*. arXiv: 2204.07621 [astro-ph.GA]
- 2    **Aganze, C.,** Burgasser, A. J., Malkan, M., Theissen, C. A., Tejada Arevalo, R. A., Hsu, C.-C., ... Holwerda, B. (2022, January). *Beyond the Local Volume. I. Surface Densities of Ultracool Dwarfs in Deep HST/WFC3 Parallel Fields*. doi:10.3847/1538-4357/ac35ea. arXiv: 2110.07672 [astro-ph.SR]
- 3    **Aganze, C.,** Burgasser, A. J., Faherty, J. K., Choban, C., Escala, I., Lopez, M. A., ... Rockward, W. (2016, February). *Characterization of the Very-low-mass Secondary in the GJ 660.1AB System*. doi:10.3847/0004-6256/151/2/46. arXiv: 1512.08659 [astro-ph.SR]

### Co-author, Peer-reviewed Articles

- 1    Gan, T., Soubkiou, A., Wang, S. X., Benkhaldoun, Z., Mao, S., Artigau, É., ... Jenkins, J. M. (2022, August). TESS discovery of a sub-Neptune orbiting a mid-M dwarf TOI-2136. *514(3)*, 4120–4139. doi:10.1093/mnras/stac1448. arXiv: 2202.10024 [astro-ph.EP]

- 2 Kiwy, F., Faherty, J. K., Meisner, A., Schneider, A. C., Kirkpatrick, J. D., Kuchner, M. J., ... Backyard Worlds: Planet 9 Collaboration. (2022, July). Discovery of 34 Low-mass Comoving Systems Using NOIRLab Source Catalog DR2. *164*(1), 3. doi:10.3847/1538-3881/ac68e7. arXiv: 2204.09739 [astro-ph.SR]
- 3 Ryan, R. E., Thorman, P., Aganze, C., Burgasser, A. J., Cohen, S. H., Hathi, N. P., ... Windhorst, R. A. (2022, June). A Self-consistent Model for Brown Dwarf Populations. *932*(2), 96. doi:10.3847/1538-4357/ac6de5
- 4 Softich, E., Schneider, A. C., Patience, J., Burgasser, A. J., Shkolnik, E., Faherty, J. K., ... Backyard Worlds: Planet 9 Collaboration. (2022, February). CWISE J014611.20-050850.0AB: The Widest Known Brown Dwarf Binary in the Field. *926*(2), L12. doi:10.3847/2041-8213/ac51d8. arXiv: 2202.02315 [astro-ph.SR]
- 5 Gagliano, A., Izzo, L., Kilpatrick, C. D., Mockler, B., Jacobson-Galán, W. V., Terreran, G., ... Tinyanont, S. (2022, January). An Early-time Optical and Ultraviolet Excess in the Type-Ic SN 2020oi. *924*(2), 55. doi:10.3847/1538-4357/ac35ec. arXiv: 2105.09963 [astro-ph.HE]
- 6 Faherty, J. K., Gagné, J., Popinchalk, M., Vos, J. M., Burgasser, A. J., Schümann, J., ... Backyard Worlds: Planet 9 Collaboration. (2021, December). A Wide Planetary Mass Companion Discovered through the Citizen Science Project Backyard Worlds: Planet 9. *923*(1), 48. doi:10.3847/1538-4357/ac2499. arXiv: 2112.04678 [astro-ph.SR]
- 7 Hsu, C.-C., Burgasser, A. J., Theissen, C. A., Gelino, C. R., Birky, J. L., Diamant, S. J. M., ... Faherty, J. K. (2021, December). The Brown Dwarf Kinematics Project (BDKP). V. Radial and Rotational Velocities of T Dwarfs from Keck/NIRSPEC High-resolution Spectroscopy. *257*(2), 45. doi:10.3847/1538-4365/ac1c7d. arXiv: 2107.01222 [astro-ph.SR]
- 8 Schneider, A. C., Meisner, A. M., Gagné, J., Faherty, J. K., Marocco, F., Burgasser, A. J., ... Backyard Worlds: Planet 9 Collaboration. (2021, November). Ross 19B: An Extremely Cold Companion Discovered via the Backyard Worlds: Planet 9 Citizen Science Project. *921*(2), 140. doi:10.3847/1538-4357/ac1c75. arXiv: 2108.05321 [astro-ph.EP]
- 9 Meisner, A. M., Faherty, J. K., Kirkpatrick, J. D., Schneider, A. C., Caselden, D., Gagne, J., ... Theissen, C. (2021, October). VizieR Online Data Catalog: Spitzer follow up of 95 brown dwarfs (Meisner+, 2020). *VizieR Online Data Catalog*, J/ApJ/899/123.
- 10 Meisner, A. M., Schneider, A. C., Burgasser, A. J., Marocco, F., Line, M. R., Faherty, J. K., ... Backyard Worlds: Planet 9 Collaboration. (2021, July). New Candidate Extreme T Subdwarfs from the Backyard Worlds: Planet 9 Citizen Science Project. *915*(2), 120. doi:10.3847/1538-4357/ac013c. arXiv: 2106.01387 [astro-ph.SR]
- 11 Kirkpatrick, J. D., Gelino, C. R., Faherty, J. K., Meisner, A. M., Caselden, D., Schneider, A. C., ... Backyard Worlds: Planet 9 Collaboration. (2021, March). The Field Substellar Mass Function Based on the Full-sky 20 pc Census of 525 L, T, and

Y Dwarfs. 253(1), 7. doi:10.3847/1538-4365/abd107. arXiv: 2011.11616 [astro-ph.SR]

- 12 Meisner, A. M., Faherty, J. K., Kirkpatrick, J. D., Schneider, A. C., Caselden, D., Gagné, J., ... Backyard Worlds: Planet 9 Collaboration. (2020, August). Spitzer Follow-up of Extremely Cold Brown Dwarfs Discovered by the Backyard Worlds: Planet 9 Citizen Science Project. 899(2), 123. doi:10.3847/1538-4357/aba633. arXiv: 2008.06396 [astro-ph.SR]
- 13 Burgasser, A. J., Lopez, M. A., Mamajek, E. E., Gagné, J., Faherty, J. K., Tallis, M., ... **Aganze, C.** (2016, March). The First Brown Dwarf/Planetary-mass Object in the 32 Orionis Group. 820(1), 32. doi:10.3847/0004-637X/820/1/32. arXiv: 1602.03022 [astro-ph.SR]

## Conference Proceedings, White Papers and Research Notes

- 1 Gong, Z., Nava Vega, A., Gauna Gutierrez, E., Mendiola Maytorena, A., Verdaguer, C., **Aganze, C.**, ... Burgasser, A. J. (2022, April). *Applying Random Forest Classification to Ultracool Dwarf Discovery in Deep Surveys. I. Color Classification with SDSS, UKIDSS, and WISE Photometry.* doi:10.3847/2515-5172/ac6521
- 2 Gutierrez, E. G., Maytorena, A. M., Gong, Z., Vega, A. N., Verdaguer, C., **Aganze, C.**, ... Burgasser, A. J. (2022, April). *Applying Random Forest Classification to Ultracool Dwarf Discovery in Deep Surveys. II. Color Classification with PanSTARRS, 2MASS, UKIDSS, and WISE Photometry.* doi:10.3847/2515-5172/ac6522
- 3 Gezari, S., Bentz, M., De, K., French, K. D., Meisner, A., Ntampaka, M., ... Williams, B. (2022, February). *R2-D2: Roman and Rubin – From Data to Discovery.* arXiv: 2202.12311 [astro-ph.IM]
- 4 Dimitriadis, G., Foley, R. J., Aganze, C., Burgasser, A., Gerasimov, R., Hsu, C., ... Theissen, C. (2020a, March). *Spectroscopic Classifications of AT 2020dvr with the Lick Shane telescope.*
- 5 Dimitriadis, G., Foley, R. J., Aganze, C., Burgasser, A., Gerasimov, R., Hsu, C., ... Theissen, C. (2020b, March). *UCSC Transient Classification Report for 2020-03-04.*

## Scientific Presentations

- 2022
- **21st Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun (Cool Stars 21)**  
Popsims: A Population Simulation Code for Ultracool Dwarfs throughout the Galaxy (*Poster*)
  - **American Astronomical Society Meeting (AAS 240)**  
Probing Gaps in Globular Cluster Streams in External Galaxies with the Nancy Grace Roman Telescope (*poster*)  
**Chambliss Poster Award (Honorable Mention)**
  - **Division of Dynamical Astronomy Meeting**  
Probing Gaps in Globular Cluster Streams in External Galaxies with the Nancy Grace Roman Telescope(*poster*)

## Scientific Presentations (continued)

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- 2021
- **National Society of Black Physicists (NSBP)**  
Scale heights & Ages of Brown Dwarfs in Deep Fields (*talk*)  
**Beth Brown Memorial Award (Honorable Mention)**
  - **Big Apple Dynamics**  
Streams, Dark Matter: Future Prospects for Galaxies Beyond the Milky Way (*talk*)
  - **American Astronomical Society Meeting (AAS 237)**  
Studying Ultracool Dwarfs with the Nancy Grace Roman Space Telescope (*Invited Talk*)
  - **American Astronomical Society Meeting (AAS 237)**  
Brown Dwarfs in the Galaxy: Predictions for Future Wide-Field Observatories (*Poster*)
- Journal Club Talk, Princeton
- 2020
- **Journal Club Talk, NOIRLAB**
  - **National Society of Black Physicists (NSBP)**  
Searching for Distant Ultracool Dwarfs in Deep HST/WFC3 Surveys (*Poster*)  
**Beth Brown Memorial Award**
- 2019
- **Nancy Grace Roman Telescope Meeting**  
Brown Dwarfs Beyond Gaia: A Deep Survey of late-M, L, T Dwarfs with HST-WFC3 Parallel Fields (*Poster*)
- 2018
- **20th Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun (Cool Stars 20)**  
Brown Dwarfs Beyond Gaia: A Deep Survey of late-M, L, T Dwarfs with HST-WFC3 Parallel Fields (*Poster*)
- 2017
- **American Astronomical Society Meeting (AAS 228, 229)**  
Toward a Comprehensive Sample of VLM Chemical Abundances with APOGEE (*Poster*) **FAMOUS grant award**
- 2016
- **American Astronomical Society Meeting (227)**  
Identifying Distant Brown Dwarfs in HST/WFC3 Parallel Fields (*Poster*)
- 2015
- **National Society of Black Physicists (NSBP)**  
Characterization of the M Dwarf Binary System GJ 660.1AB (*Poster*)
- 2014
- **Society for Advancement of Chicanos/Hispanics and Native Americans in Science conference(SACNAS)**  
Characterization of the M Dwarf Binary System GJ 660.1AB (*Poster*)  
**Best Poster Award**





## Awards

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- 2022
- Bouchet Honor Society (Honorable Mention)
- 2021
- Beth Brown Memorial Award ( Honorable Mention AAS, NSBP)
  - LSST DPo Delegate
- 2020
- Beth Brown Memorial Award (AAS, NSBP)






## Awards (continued)

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- 2018     LSST Data Science Fellowship
- 2016     UC-HBCU Graduate Student Fellowship
- 2015     FAMOUS Travel Grant (AAS)
- 2014     Poster Award (SACNAS)

## Training and Workshops

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- 2021     Software Carpentries Instructor Training (Virtual)
  -  Summer School on Galactic Dynamics (The Flatiron Institute, NY, NY)
- 2020     Big Data and Deep Learning Workshop (Pittsburg Supercomputing Center)
- 2017     Kraft Observational Astronomy Workshop (Lick Observatory, San Jose, CA)
  -  Scicoder Workshop (Vanderbilt University, Nashville, TN)



## Telescope Proposals

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- 2021     *Telescope Proposal*: Radial Velocity Monitoring of A New Peculiar Nearby M Dwarf (APF/Shane Telescope)



## Skills

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- Coding     Python, Github, Parallel Computing
- Research     NIR Spectral Analysis, Machine Learning, Archival Data Analysis, Optical & NIR Telescope Observations

## Organizations, Service and Outreach

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- 2016–     American Astronomical Society (AAS)
  - National Society of Black Physicists (NSBP)
  - UCSD Graduate Student Association (GSA)
  - Physics Graduate Student Council (PGC)
- 2014–2016     Society of Physics Students (SPS)