

ANIKET SANGHI

Astronomy & Physics Senior at the University of Texas at Austin

☎ +1 737-288-7241 ✉ asanghi01@utexas.edu 💼 [linkedin.com/in/aniketsanghi](https://www.linkedin.com/in/aniketsanghi) 🐙 github.com/cosmicoder

APPOINTMENTS

REU Fellow, Institute for Astronomy, University of Hawai'i at Mānoa, advisor: Dr. Michael C. Liu

SURF Fellow, California Institute of Technology, advisors: Dr. Dimitri Mawet, Dr. Jason Wang, Jerry Xuan

Research Assistant, University of Texas at Austin, advisors: Dr. Brendan P. Bowler, Dr. Yifan Zhou

TIDES Research Fellow, University of Texas at Austin, advisors: Dr. Michael H. Montgomery, Dr. Zachary P. Vanderbosch

Research Assistant, University of Texas at Austin, advisor: Dr. William M.J. Best

Independent Researcher, University of Texas at Austin, advisor: Dr. Mark L. Daniels

EDUCATION

The University of Texas at Austin

Anticipated May 2023

Degrees: B.S. Astronomy (2019-2023), B.S. Physics (2019-2023)

GPA: 4.0/4.0

Honors: Dean's Honored Graduate, Student Marshall—75th Honors Day Ceremony, Distinguished College Scholar (top 4% in the College of Natural Sciences), CNS Second Year Excellence Award

Major Awards: Barry M. Goldwater Scholarship (2022), Universities Space Research Association Distinguished Undergraduate Award (2021), NASA Texas Space Grant Consortium STEM Scholarship (2021), and American Astronomical Society's Chambliss Astronomy Achievement Student Award (2021).

Graduate Fellowships: NSF GRFP, Hertz Fellowship Finalist

PUBLICATIONS & PROGRAMS

First/Dual-First (*) Author Refereed/Under Review Papers

- Sanghi, A., Liu, M. C., Best W. M., et al., 2022. “*The Hawaii Infrared Parallax Program. VI. The Fundamental Properties of 1000+ Ultracool Dwarfs and Planetary-Mass Objects using Optical to Mid-infrared Spectral Energy Distributions*”. Submitted to *The Astrophysical Journal*.
- Zhou, Y.*, Sanghi, A.*, Bowler, B. P., et al., 2022, ApJL, 934, L13. “*HST/WFC3 H α Direct-Imaging Detection of a Pointlike Source in the Disk Cavity of AB Aur.*”
<https://ui.adsabs.harvard.edu/abs/2022ApJ...934L..13Z>
- Sanghi, A., Zhou, Y., Bowler, B. P., 2022, AJ, 163, 119. “*Efficiently Imaging Accreting Protoplanets from Space: Reference Star Differential Imaging of the PDS 70 Planetary System using the HST/WFC3 Archival PSF Library.*”
<https://ui.adsabs.harvard.edu/abs/2022AJ....163..119S>
- Sanghi, A., Vanderbosch, Z. P., Montgomery, M. H., 2021, AJ, 162, 133. “*Identifying Periodic Variable Stars and Eclipsing Binary Systems with Long-Term Las Cumbres Observatory Photometric Monitoring of ZTF J0139+5245.*”
<https://ui.adsabs.harvard.edu/abs/2021AJ....162..133S>
- Sanghi, A., 2021, The College Mathematics Journal, 52(5), 373-379. “*Visualizing the Complex Roots of Quadratic and Cubic Polynomial Functions in Three Dimensions.*”
<https://www.tandfonline.com/doi/10.1080/07468342.2021.1969178>

Co-author Refereed/Under Review Papers

- Franson, K., Bowler, B. P., Zhou, Y., et al. (incl. Sanghi, A.), 2023. “*Astrometric Accelerations as Dynamical Beacons: A Giant Planet Imaged Inside the Debris Disk of the Young Star AF Lep.*” Submitted to *The Astrophysical Journal Letters*.
<https://ui.adsabs.harvard.edu/abs/2023arXiv230205420F>
- Vedantham, H. K., Dupuy, T. J., Evans, E. L., Sanghi, A., et al., 2022. “*Polarized radio pulsations from a new T dwarf binary.*” Accepted to the *Astronomy & Astrophysics Letters*.
<https://ui.adsabs.harvard.edu/abs/2023arXiv230101003V>
- Franson, K., Bowler, B. P., Bonavita, M., et al. (incl. Sanghi, A.), 2023, 165, 39. “*Astrometric Accelerations as Dynamical Beacons: Discovery and Characterization of HIP 21152 B, the First T-Dwarf Companion in the Hyades.*”
<https://ui.adsabs.harvard.edu/abs/2023AJ....165...39F>
- Dupuy, T. J., Liu, M. C., Evans E. L., et al. (incl. Sanghi, A.), 2023, MNRAS, 519, 1688. “*On the Masses, Age, & Architecture of the VHS J1256-1257AB b System.*”
<https://ui.adsabs.harvard.edu/abs/2023MNRAS.519.1688D>

- The Astropy Collaboration, Price-Whelan, A. M., Lian Lim, P., et al. (incl. **Sanghi, A.**), 2022, ApJ, 935, 167. “*The Astropy Project: Sustaining and Growing a Community-oriented Open-source Project and the Latest Major Release (v5.0) of the Core Package*”
<https://ui.adsabs.harvard.edu/abs/2022ApJ...935..167A>

Non-Refereed Works

- Feeder, S. J., Best, W. M. J., **Sanghi, A.**, & Liu, M. C., 2022, RNAAS, 6, 265. “*Updated Spectral Type Polynomials for Ultracool Dwarfs with CatWISE Photometry.*”
<https://iopscience.iop.org/article/10.3847/2515-5172/acaafb>
- **Sanghi, A.**, Best, W. M., Liu, M. C., Magnier, E. A., & Dupuy, T. J., 2021, American Astronomical Society Meeting Abstracts, Vol. 53, 339.08. “*Measuring the Substellar IMF using a 25 pc Volume-Limited Sample of L0-T8 Brown Dwarfs.*”
<https://ui.adsabs.harvard.edu/abs/2021AAS...23733908S>
- Best, W., **Sanghi, A.**, Liu, M., Magnier, E., & Dupuy, T. 2021, The 20.5th Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun (CS20.5), 278. “*The Initial Mass Function and Birth History of Brown Dwarfs in the Solar Neighborhood from a Volume-Limited Sample.*”
<https://ui.adsabs.harvard.edu/abs/2021csss.confE.278B>
- Bowler, B., Cochran, W., Endl, M., et al. (incl. **Sanghi, A.**), 2022, BAAS, AASTCS9, Exoplanets 4. “*Dynamical Beacons: Discovering and Characterizing Long-period Giant Planets and Brown Dwarfs with Astrometric Accelerations*”
<https://ui.adsabs.harvard.edu/abs/2022BAAS...54e4003B/abstract>

Observing Programs

- **Co-Investigator.** “*Confirming the Protoplanet Candidate AB Aur b with Accretion Light Echoes.*” HST Cycle-30 GO Program (PI: Dr. Brendan Bowler; 20 orbits).
<https://ui.adsabs.harvard.edu/abs/2022hst..prop17168B>
- **Co-Investigator.** “*Imaging Giant Planets around Young Accelerating Stars.*” NASA/Keck 2022B GO Program (PI: Mr. Kyle Franson; 1 night).
- **Co-Investigator.** “*A Search for Accreting Protoplanets within Transition Disk Gaps.*” HST Cycle-29 GO Program (PI: Dr. Yifan Zhou; 30 orbits).
<https://ui.adsabs.harvard.edu/abs/2021hst..prop16651Z>
- **Co-Investigator.** “*New Substellar Dynamical Masses from Accelerating Stars.*” NASA/Keck 2022A GO Program (PI: Dr. Brendan P. Bowler; 1 night).

RESEARCH EXPERIENCE

Fundamental Properties of 1000+ Ultracool Dwarfs using Optical to MIR SEDs May 2022 – November 2022

Institute for Astronomy, Univ. of Hawai‘i at Mānoa

Dr. Michael C. Liu

- Assembled and directly integrated optical to mid-infrared spectral energy distributions of 1000+ ultracool dwarfs consisting of SpeX Prism near-infrared spectra, Pan-STARRS optical photometry, and WISE mid-infrared photometry to obtain accurate and precise bolometric luminosities.
- Implemented Bayesian Rejection Sampling techniques to calculate the masses, radii, effective temperatures, and surface gravities of the ultracool dwarf sample from their corresponding bolometric luminosities and ages using evolutionary models.
- Increased the sample size of ultracool dwarfs with empirical fundamental physical parameters by a factor of ~ 5 .
- Constructed and analyzed empirical relationships between luminosity, temperature, and absolute magnitude as functions of spectral type and absolute magnitude to enable distinctions between degenerate physical properties and study atmospheric model systematics.
- Cross-matched 3000+ ultracool dwarfs in the UltracoolSheet with CatWISE to retrieve updated proper motions and photometry — results to be publicly available in a new release of the UltracoolSheet and updated spectral type polynomials accepted to the [Research Notes of the AAS](#).
- Applied the pipeline developed in this work to obtain the integrated-light bolometric luminosity measurements for VHS J1256–1257AB and a new T-dwarf binary as part of two co-authored papers, one published in the [Monthly Notices of the Royal Astronomical Society](#) and the other accepted to the [Astronomy & Astrophysics Letters](#).
- First-author paper on the largest sample of ultracool dwarfs with empirical fundamental parameter measurements submitted to the American Astronomical Society’s Astrophysical Journal.

Search for Accreting Protoplanets in Transition Disk Gaps with HST/WFC3

Dept. of Astronomy, Univ. of Texas at Austin

February 2022 – Present

HALPHA Survey Team

- Launched the Hubble Accreting Protoplanets in H-Alpha (HALPHA) Survey with the Hubble Space Telescope's Wide-Field Camera 3 to search for new accreting protoplanets in the gaps of ten transition protoplanetary disks.
- Led the high-contrast imaging analysis of the first survey target, AB Aurigae, using angular and reference star differential imaging to uncover an H α -emitting point source consistent with the position of candidate protoplanet AB Aur b.
- Tested numerous reduction set-ups and implemented injection-recovery tests to confirm the robustness of the detection.
- Compared the SED of the point source with that of the confirmed protoplanet PDS 70 b to find a higher bolometric luminosity, higher effective temperature, and several orders of magnitude lower H α line-to-continuum ratio.
- Showed that the H α line-to-continuum ratio of the candidate is consistent with that of the host star, pointing to a potential dust scattering scenario.
- Launched a novel light echo experiment to test the scattering scenario vs the planet hypothesis with HST/WFC3 as part of an accepted Cycle 30 program.
- [Dual-first-author paper](#) on the detection and characterization of the H α -emitting candidate protoplanet in the transition disk of the star AB Aurigae published in the American Astronomical Society's Astrophysical Journal Letters.

SUPER-RDI with the Keck-NIRC2 Vortex Coronagraph

June 2021 – Present

Dept. of Astronomy, California Institute of Technology

Dr. Dimitri Mawet, Dr. Jason Wang & Jerry Xuan

- Leveraged ~ 8000 archival point spread function (PSF) observations by the Keck/NIRC2 vortex coronagraph to develop a suite of metrics to rank reference PSFs by their similarity to the science observations and enable the optimal implementation of the RDI strategy.
- Demonstrated significant improvements in exoplanet detection sensitivity levels with this technique compared to the default strategy of using reference stars observed in the same night as the science target.
- Applying developed techniques to analyze a multi-year Keck/NIRC2 survey to study the demographics of exoplanets around M-dwarf stars.

HST/WFC3 Reference Star Differential Imaging (RDI) of PDS 70

August 2020 – September 2021

Dept. of Astronomy, Univ. of Texas at Austin

Dr. Brendan P. Bowler & Dr. Yifan Zhou

- Demonstrated the applicability of RDI in space-based exoplanet imaging observations by conducting this method with F656N H α Hubble Space Telescope Wide Field Camera 3 (HST/WFC3) images of PDS 70.
- Compiled a reference PSF library from the HST/WFC3 archival PSF library provided by STScI and developed a set of morphology-significance criteria for pre-selection of reference stars to achieve optimal RDI subtraction.
- Detected the planet PDS 70b at an S/N of 5.3. Calibrated the astrometry and photometry of the detection of PDS 70b using a forward-modeling method and injection-recovery testing.
- Calculated the 5σ mass accretion rate and H α luminosity sensitivity levels for potential planets around select transition disk targets suitable for HST observations.
- [First-author paper](#) on techniques to implement the RDI strategy in space-based observations published in the American Astronomical Society's Astronomical Journal.

Variable Stars in LCO Photometric Data

January 2020 – May 2021

Dept. of Astronomy, Univ. of Texas at Austin

Dr. Michael H. Montgomery & Dr. Zachary P. Vanderbosch

- Performed aperture photometry and Fourier analysis on over 2000 stars across 1560 LCO images spanning 537 days to find 28 candidate BY Draconis variables, 3 candidate eclipsing binaries of type EA, and 7 candidate eclipsing binaries of type EW.
- Determined that the improved photometric precision per-exposure, due to the longer exposure time for LCO images, combined with lower noise levels, due to the greater time-sampling of LCO photometry, enables us to improve the total number of detections in our field-of-view.
- Demonstrated the applicability of the *Gaia* color-magnitude diagram (CMD) as a powerful classification tool for variable star studies.
- [First-author paper](#) detailing our results published in the American Astronomical Society's Astronomical Journal.

The Initial Mass Function and Birth History of Brown Dwarfs

September 2019 – September 2020

Dept. of Astronomy, Univ. of Texas at Austin

Dr. William M.J. Best

- Used population synthesis analysis to obtain one of the most robust and strict constraints on the substellar IMF with a 25-pc volume limited sample of brown dwarfs identified using state-of-the-art parallax measurements.
- Simultaneously constrained the power law form of the initial mass function and tested multiple birth rate models such as the exponential, single-age, and Dupuy & Liu 2017 age distributions, as well as multiple evolutionary models such as those of Saumon & Marley (SM08), and the COND evolutionary models.
- Delivered proof-of-concept on using a 25-pc volume-limited sample of main-sequence stars and brown dwarfs to constrain the Chabrier (2003) lognormal form of the IMF.

Visualizing the Complex Roots of Quadratic and Cubic Functions

September 2019 – December 2019

Dept. of Mathematics, Univ. of Texas at Austin

Dr. Mark L. Daniels

- Developed a dimensionality reduction technique to visualize the complex roots of quadratic and cubic polynomials using interactive 3D plots in MATLAB.
- Enhanced classroom learning, stimulated original thinking, and offered unique perspectives on topics in undergraduate mathematics using this novel visualization method.
- [First-author paper](#) describing the technique and its application published in the Mathematical Association of America's (MAA) College Mathematics Journal.

HONORS & AWARDS

Scholarships & Fellowships

- Ralph Cutler Greene Endowed Scholarship (\$2500) — Dept. of Astronomy, UT Austin 12/2022
- Hou-Li Scholarship in Natural Sciences (\$1500) — College of Natural Sciences, UT Austin 07/2022
- NSF REU Fellowship (\$6000) — Institute for Astronomy, University of Hawai'i-Mānoa 05/2022
- Ralph Nelson Endowed Presidential Scholarship (\$2500) — University of Texas at Austin 05/2022
- George H. Mitchell Award (Grand Prize/STEM) (\$7000) — University Co-op, UT Austin 05/2022
- Barry M. Goldwater Scholar (\$7500) — Barry Goldwater Scholarship and Excellence in Education Foundation 03/2022
- John Kelley Texas Amateur Astronomers' Scholarship (\$3000) — Dept. of Astronomy, UT Austin 12/2021
- Thomas McGetchin Memorial Distinguished Undergrad. Award (\$5000) — Universities Space Research Association 11/2021
- NASA Texas Space Grant Consortium STEM Scholarship (\$2000) — NASA Space Grant Consortium 07/2021
- Nancy and William McMinn Endowed Presidential Scholarship in Physics (\$3175) — Dept. of Physics, UT Austin 06/2021
- Emory and Ella Peterson Endowed Presidential Scholarship (\$2500) — University of Texas at Austin 05/2021
- Summer Undergraduate Research Fellowship (\$6620) — Dept. of Astronomy, California Institute of Technology 04/2021
- Carl Stone Benedict Scholarship (\$1000) — College of Natural Sciences, UT Austin 07/2020
- John W. Cox Endowment Award for Advanced Studies in Astronomy (\$4320) — Dept. of Astronomy, UT Austin 05/2020
- Harwood Family Endowed Scholarship in Natural Sciences (\$1500) — College of Natural Sciences, UT Austin 05/2020

Awards

- 2022 SACNAS NDiSTEM Conference Poster Presentation Awardee (\$200) — San Juan, Puerto Rico 10/2022
- Best Poster Design (\$500) — Longhorn Research Poster Session, Office of Undergraduate Research, UT Austin 04/2021
- CNS Second Year Excellence Award — College of Natural Sciences, University of Texas at Austin 03/2021
- Distinguished College Scholar — University of Texas at Austin 03/2021
- Honorable Mention Research Communication Video — Texas Research Showdown, University of Texas at Austin 03/2021
- Chambliss Astronomy Achievement Student Award — American Astronomical Society 01/2021
- Conference Travel Award (\$200) — Dept. of Astronomy, University of Texas at Austin 11/2020

COMMUNITY ENGAGEMENT, LEADERSHIP & SERVICE

Goldwater D&I Mentorship Program, Goldwater Scholars Community

June 2022 – Present

Goldwater Ambassador

Austin, TX

- Serving as a mentor for an undergraduate STEM student from a school and demographic underrepresented in the Goldwater Scholars Community.
- Aiding my mentee in their professional journey by showing them how to make the most of their research projects, navigate advisor-advisee relationships, advocate for themselves, and prepare strong applications for nationally competitive scholarships.

Sanger Learning Center, University of Texas at Austin

August 2020 – Present

Student Educator and Sanger Learning Center Tutor

Austin, TX

- Work as a trained tutor at the Sanger Learning Center at UT Austin helping students, one-on-one, understand concepts, principles underlying questions, and problems covered in physics, astronomy, and calculus courses.
- Contribute to the University's core purpose and mission by fostering independent learning using active learning techniques rooted in education research.

Astronomy Students Association, University of Texas at Austin

August 2019 – Present

Active Outreach Volunteer in Astronomy and Physics

Austin, TX

- Involved in regular outreach efforts to bring astronomy to a wide audience.
- Communicated my research on brown dwarfs to 40 astronomy students at Kealing Middle School through simplified explanations aided by an interactive PowerPoint presentation using simulations and graphs.
- Explained concepts in physics and astronomy to elementary school students attending "Hot Science – Cool Talks" at the Jackson Geoscience Building using a Doppler Ball demonstration, a Rainbow Wheel, a Supernova Bounce demonstration, a Mars Globe, and a Star Map.
- Set-up public telescope viewings of planets at the Bullock Texas State History Museum in Austin, TX, Old Settler's Park in Round Rock, TX, and Enchanted Rock State Natural Area, TX.
- Served on the prospective student-current student Q&A panel for two years.

Student Leadership Team, Leadership and Ethics Institute (LEI)

January 2020 – December 2020

LEAP Mentor and Advanced Leader

Austin, TX

- Led a 7-week workshop on ethical, inclusive, collaborative and value-based leadership as a part of the Leadership Education and Progress (LEAP) program.
- Mentored over 25 UT students and helped them formulate their personal definition of leadership, by translating their goals into an action plan to guide them as they progress through college.
- Worked as part of the larger Student Leadership Team at LEI to promote leadership development, diversity, equity, and inclusion across campus.

- Guided a dedicated three-person team in remote tutoring incoming students at UT Austin in college preparatory mathematics.
- Organized new-student orientation programs, shared key strategies on securing research opportunities and scholarships, and served as their go-to support during the COVID-19 pandemic.

ORAL PRESENTATIONS & POSTERS

Contributed Talks

1. Sanghi, A. et al. “The Fundamental Physical Properties of 1000+ Ultracool Dwarfs using Optical to Mid-infrared Spectral Energy Distributions,” UH/IfA REU Final Presentations, Institute for Astronomy, University of Hawai‘i at Mānoa, July 28, 2022. Watch online [here](#).
2. Sanghi, A. et al. “Reference Star Differential Imaging of the PDS 70 planetary system with the HST/WFC3 Archival PSF Library,” CHAMPs Exoplanet Early Career Highlight Seminar, Virtual Seminar, January 14, 2022. Watch online (starting 27:30) [here](#).
3. Sanghi, A. et al. “SUPER-RDI: Improving Exoplanet Detection Limits at Small Angular Separations with the Keck/NIRC2 Imager,” SURF Fall Seminar Day, California Institute of Technology, Virtual Seminar, October 16, 2021. Watch online [here](#).
4. Sanghi, A. et al. “Reference Star Differential Imaging of the PDS 70 planetary system with HST/WFC3,” Capital of Texas Undergraduate Research Conference, University of Texas at Austin, Virtual Conference, January 26, 2021. Watch online [here](#).
5. Sanghi, A. et al. “Reference Star Differential Imaging of the PDS 70 planetary system with HST/WFC3,” Society of Physics Students General Meeting, University of Texas at Austin, Virtual Meeting, November 4, 2020.
6. Sanghi, A. et al. “Reference Star Differential Imaging of the PDS 70 planetary system with HST/WFC3,” Astronomy Students Association General Meeting, University of Texas at Austin, Virtual Meeting, October 17, 2020.
7. Sanghi, A. et al. “Population Synthesis Simulations: Uncovering the Mass Distribution of Brown Dwarfs in the Solar Neighborhood,” Summer Undergraduate Research Seminar, Department of Astronomy, University of Texas at Austin, Virtual Seminar, August 14, 2020. Watch online (starting 1:07:28) [here](#).
8. Sanghi, A., and Daniels, M. L., “Visualizing the Complex Roots of Quadratic and Cubic Polynomial Functions in Three Dimensions,” UGS303 - From Numbers to Chaos, Research Seminar, University of Texas at Austin, Austin, TX, December 5, 2019.

Contributed Posters

1. Sanghi, A. et al. “The Hawaii Infrared Parallax Program. VI. The Fundamental Properties of 1000+ Ultracool Dwarfs using Optical to Mid-infrared Spectral Energy Distributions,” 241st American Astronomical Society Meeting, Seattle, WA, January 8-12, 2023. View the AAS 241 iPoster [here](#).
2. Sanghi, A. et al. “Efficiently Imaging Accreting Protoplanets from Space: Reference Star Differential Imaging of the PDS 70 planetary system with HST/WFC3,” SACNAS National Diversity in STEM Conference, San Juan, Puerto Rico, October 27-29, 2022. *Received SACNAS Poster Presentation Award in the Physics/Astronomy category for research poster and presentation.*
3. Sanghi, A. et al. “Efficiently Imaging Accreting Protoplanets from Space: Reference Star Differential Imaging of the PDS 70 planetary system with HST/WFC3,” Emerging Researchers in Exoplanet Science VII, Pennsylvania State University, August 1-3, 2022. View the poster online [here](#).
4. Sanghi, A. et al. “The Fundamental Physical Properties of 1000+ Ultracool Dwarfs using Optical to Mid-infrared Spectral Energy Distributions,” SURE Poster Symposium, University of Hawai‘i at Mānoa, July 29, 2022. View the poster online [here](#).
5. Sanghi, A. et al. “Reference Star Differential Imaging of the PDS 70 planetary system with HST/WFC3,” Sagan Summer Workshop, NExSci, Virtual Workshop, July 19-23, 2021. View the poster online [here](#).
6. Sanghi, A. et al. “Reference Star Differential Imaging of the PDS 70 planetary system with HST/WFC3,” Undergraduate Research Forum, University of Texas at Austin, Virtual Forum, April 16, 2021. View the poster online [here](#).
7. Sanghi, A. et al. “Reference Star Differential Imaging of the PDS 70 planetary system with HST/WFC3,” Longhorn Research Poster Session, University of Texas at Austin, Virtual Forum, April 14-15, 2021. *Received award for Best Poster Design.* View the poster online [here](#).

8. Sanghi, A. et al. "Identifying Periodic Variable Stars and Eclipsing Binary Systems with Long-Term Las Cumbres Observatory Photometric Monitoring of ZTF J0139+5245," Freshman Research Initiative Poster Session: Exploring the Physics of White Dwarf Stars, University of Texas at Austin, Virtual, December 8, 2020. View the poster online [here](#).
9. Sanghi, A. et al. "Measuring the Substellar IMF using a 25 pc Volume-Limited Sample of L0-T8 Brown Dwarfs," 237th American Astronomical Society Meeting, Virtual Meeting, January 13, 2021. *Received Chambliss Astronomy Achievement Award for research poster and presentation*. View the AAS 237 iPoster [here](#).
10. Sanghi, A. et al. "Population Synthesis Simulations: Uncovering the Mass Distribution of Brown Dwarfs in the Solar Neighborhood," Undergraduate Research Forum, University of Texas at Austin, Virtual Forum, April 16, 2020. View the poster online [here](#).
11. Sanghi, A., and Daniels, M. L., "Visualizing the Complex Roots of Quadratic and Cubic Polynomial Functions in Three Dimensions," Undergraduate Research Forum, University of Texas at Austin, Virtual Forum, April 16, 2020. View the poster online [here](#).
12. Sanghi, A. et al. "Population Synthesis Simulations: Uncovering the Mass Distribution of Brown Dwarfs in the Solar Neighborhood," Longhorn Research Poster Session, University of Texas at Austin, Virtual Forum, April 14-15, 2020. View the poster online [here](#).
13. Sanghi, A., and Daniels, M. L., "Visualizing the Complex Roots of Quadratic and Cubic Polynomial Functions in Three Dimensions," Longhorn Research Poster Session, University of Texas at Austin, Virtual Forum, April 14-15, 2020. View the poster online [here](#).

Public/Outreach Presentations

1. Sanghi, A. "Photographing Distant Alien Worlds," Schrödingers Pint, Darwin's Piano Bar, Austin, TX. Listen [here](#).
2. Sanghi, A. et al. "Reference Star Differential Imaging of the PDS 70 planetary system with HST/WFC3," 2021 Texas Research Showdown, Video Competition at the University of Texas at Austin. *Received honorable mention for research communication video (200+ views)*. Watch online [here](#).
3. Sanghi, A., and Daniels, M. L., "Visualizing the Complex Roots of Quadratic and Cubic Polynomial Functions in Three Dimensions," National Public School, Bangalore, India, January 15, 2020.
4. Sanghi, A. et al. "Population Synthesis Simulations: Uncovering the Mass Distribution of Brown Dwarfs in our Solar Neighborhood," Kealing Middle School, Austin, TX, December 10, 2019.

CONFERENCE & WORKSHOP ATTENDANCE

- American Astronomical Society's 241st Meeting, Seattle, WA, January 8-12, 2023.
- National Diversity in STEM (NDiSTEM) Conference, SACNAS, San Juan, Puerto Rico, October 27-29, 2022.
- Emerging Researchers in Exoplanet Science (ERES) VII, Penn State, Heising-Simons Foundation, August 1-3, 2022.
- CHAMPs Exoplanet Early Career Highlight Seminar, CHAMPs Collaboration, January 13-14, 2022.
- Sagan Summer Virtual Workshop, "Circumstellar Disks and Young Planets," NExSci, July 19-23, 2021.
- Code/Astro Virtual Workshop, "Software Engineering in Astronomy," Heising-Simons Foundation, June 21-25, 2021.
- American Astronomical Society's 237th Virtual Meeting, January 10-15, 2021.
- Keck Science Meeting, W. M. Keck Observatory, Virtual Meeting, September 24-25, 2020.
- SciPy 2020 Virtual Conference, "Scientific Computing with Python," July 5-10, 2020.