

# – ANIKET SANGHI –

## *Curriculum Vitae*

### CONTACT INFORMATION

California Institute of Technology  
Cahill Center for Astronomy and Astrophysics  
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Pasadena, CA 91125

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### EDUCATION

California Institute of Technology <i>Ph.D. in Astrophysics</i>	Anticipated 2028 Graduate Advisor: Dimitri Mawet
California Institute of Technology <i>M.S. in Astrophysics</i>	June 2025
The University of Texas at Austin <i>B.S. in Astronomy (Honors) &amp; B.S. in Physics</i>	May 2023 <i>Summa Cum Laude</i>

### PROFESSIONAL APPOINTMENTS

• NSF Graduate Research Fellow, California Institute of Technology	August 2023 – Present
• Undergraduate Research Assistant, Dept. of Astronomy, The University of Texas at Austin	August 2019 – May 2023
• NSF REU Fellow, Institute for Astronomy, University of Hawai‘i at Mānoa	May 2022 – August 2022
• SURF Fellow, California Institute of Technology	May 2021 – August 2021

### RESEARCH INTERESTS

*Science Emphasis:* Formation and Evolution of Solar System-Analog Giant Planets, Direct Detection of Low-mass Planets  
*Technical Emphasis:* High-contrast Imaging, Direct and Fiber Nulling Spectroscopy, Astrometry, Interferometry

### GRANTS AWARDED

\$15,000, Co-PI, JWST Cycle 4 PID #9431, NASA/STScI	04/2026
\$33,000, Co-PI, JWST Cycle 4 PID #8714, NASA/STScI	01/2026
\$32,000, Co-PI, JWST Cycle 3 PID #9252, NASA/STScI	07/2025
\$32,000, Co-PI, JWST Cycle 3 PID #6797, NASA/STScI	07/2025
\$148,000, NSF Graduate Research Fellowship, National Science Foundation	09/2023

### PI/Co-PI OBSERVING PROGRAMS

#### James Webb Space Telescope

8.5 hours (Co-PI)	First Images of our Young Jupiter Neighbor	JWST Cycle 4 DD #9431
19.1 hours (Co-PI)	Combining Isotopic and Elemental Abundances to Unveil the Formation and Accretion History of a Cold Jupiter	JWST Cycle 4 GO #8714
45.5 hours (Co-PI)	Confirming a Planet Orbiting Our Closest Solar Twin	JWST Cycle 3 DD #9252
48.8 hours (Co-PI)	Confirming the Presence of a Gas Giant Planet Orbiting a Nearby Solar-type Star	JWST Cycle 3 DD #6797

#### Keck Observatory

11 nights (Program Lead <sup>1</sup> )	A Dynamically-Informed Search for Brown Dwarfs and Exoplanets in Young Moving Groups with KPIC/VFN and Keck/NIRC2	Keck 2024B/2025A/2025B
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#### CHARA Array (NOIRLab)

2.5 nights (PI)	Ensemble Validation of Gaia DR3 NSS Orbital Solutions with Precise CHARA Astrometry in Preparation for Gaia DR4	NOIRLab 2024B
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<sup>1</sup>Caltech PI: D. Mawet

## PUBLICATIONS

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Refereed publications: 28 (8 first authored; 2 second/third authored; 18 co-authored)

Non-refereed publications: 6 (4 AAS Research Notes, 1 White Paper, 1 Software Contribution)

Total citations (all papers): 475

Total citations (first author): 137

h-index (all papers): 14

### First/Shared-First (\*) Author Papers

1. "Worlds Next Door: A Candidate Giant Planet Imaged in the Habitable Zone of  $\alpha$  Cen A. II. Binary Star Modeling, Planet and Exozodi Search, and Sensitivity Analysis"  
**Sanghi, A.\***, Beichman, C.\*, Mawet, D., et al., 2025, *ApJL*, 989, L23. (*Zenodo Dataset*)
2. "Worlds Next Door: A Candidate Giant Planet Imaged in the Habitable Zone of  $\alpha$  Cen A. I. Observations, Orbital and Physical Properties, and Exozodi Upper Limits"  
Beichman, C.\*; **Sanghi, A.\***, Mawet, D., et al., 2025, *ApJL*, 989, L22. (*Zenodo Dataset*)
3. "Efficiently Searching for Close-in Companions around Young M Dwarfs using a Multi-year PSF Library."  
**Sanghi, A.**, Xuan, J. W., Wang, J. J., et al., 2024, *AJ*, 168, 218. (*Zenodo Dataset*)
4. "The Hawaii Infrared Parallax Program. VI. The Fundamental Properties of 1000+ Ultracool Dwarfs and Planetary-mass Objects Using Optical to Mid-IR SEDs and Comparison to BT-SETTL and ATMO 2020 Model Atmospheres."  
**Sanghi, A.**, Liu, M. C., Best, W. M., et al., 2023, *ApJ*, 959, 63. (*Zenodo Dataset*)
5. "HST/WFC3 H $\alpha$  Direct-Imaging Detection of a Pointlike Source in the Disk Cavity of AB Aur."  
Zhou, Y.\*; **Sanghi, A.\***, Bowler, B. P., et al., 2022, *ApJL*, 934, L13.
6. "Efficiently Imaging Accreting Protoplanets from Space: Reference Star Differential Imaging of the PDS 70 Planetary System using the HST/WFC3 Archival PSF Library."  
**Sanghi, A.**, Zhou, Y., Bowler, B. P., 2022, *AJ*, 163, 119.
7. "Identifying Periodic Variable Stars and Eclipsing Binary Systems with Long-Term Las Cumbres Observatory Photometric Monitoring of ZTF J0139+5245."  
**Sanghi, A.**, Vanderbosch, Z. P., Montgomery, M. H., 2021, *AJ*, 162, 133.
8. "Visualizing the Complex Roots of Quadratic and Cubic Polynomial Functions in Three Dimensions."  
**Sanghi, A.**, 2021, *The College Mathematics Journal*, 52(5), 373-379.

### Second and Third Author Papers

1. "Evidence for Variable Accretion onto PDS 70 c and Implications for Protoplanet Detections"  
Zhou, Y., Bowler, B. P., **Sanghi, A.**, et al., 2025, *ApJL*, 980, L39.
2. "A Volume-Limited Sample of Ultracool Dwarfs. II. The Substellar Age and Mass Functions in the Solar Neighborhood."  
Best, W. M.; **Sanghi, A.**, Liu, M. C., et al., 2024, *ApJ*, 967, 115.

### Additional Co-author Papers

1. "HD 143811 AB b: A Directly Imaged Planet Orbiting a Spectroscopic Binary in Sco-Cen"  
Jones, N. K., Wang, J. J., Nielsen, E. L., et al. (incl. **Sanghi, A.**), 2025, *ApJL*, 995, 2, L41.
2. "Characterization of the Host Binary of the Directly Imaged Exoplanet HD 143811 AB b"  
Peck, A. E., Roberson, W., Nielsen, E. L., et al. (incl. **Sanghi, A.**), 2025, *ApJL*, 995, 2, L40.
3. "Discovery of a Debris Disk around TWA 20"  
Palatnick, S., Millar-Blanchaer, M., Zhang, J., et al. (incl. **Sanghi, A.**), 2025, *ApJ*, 995, 2, 149.
4. "Direct Imaging Explorations for Companions from the Subaru/IRD Strategic Program II; Discovery of a Brown-dwarf Companion around a Nearby Mid-M-dwarf LSPM J1446+4633"  
Uyama, T., Kuzuhara, M., Beichman, C., et al. (incl. **Sanghi, A.**), 2025, *AJ*, 170, 5, 272.
5. "Astrometric Methods for Detecting Exomoons Orbiting Imaged Exoplanets: Prospects for Detecting Moons Orbiting a Giant Planet in  $\alpha$  Centauri A's Habitable Zone"  
Wagner, K., Douglas, E., Ertel, S., et al. (incl. **Sanghi, A.**), 2025, *ApJL*, 991, 2, L44.

6. "Searching for Planets Orbiting  $\epsilon$  Eridani with JWST/NIRCam"  
Llop-Sayson, J., Beichman, C., Bryden, G., et al. (incl. **Sanghi, A.**), 2025, *AJ*, 170, 4, 229.
7. "Follow-Up Exploration of the TWA 7 Planet-Disk System with JWST NIRCam"  
Crotts, K. A., Carter, A. L., Lawson, K., et al. (incl. **Sanghi, A.**), 2025, *ApJL*, 987, 2, L41.
8. "H $\alpha$  Variability of AB Aur b with the Hubble Space Telescope: Probing the Nature of a Protoplanet Candidate with Accretion Light Echoes"  
Bowler, B. P., Zhou, Y., Biddle, L., et al. (incl. **Sanghi, A.**), 2025, *AJ*, 169, 5, 258.
9. "Technical description and performance of the phase II version of the Keck Planet Imager and Characterizer"  
Jovanovic, N., Echeverri, D., Delorme, J. R., et al. (incl. **Sanghi, A.**), 2025, *JATIS*, 11(1), 015005.
10. "HD 206893 B at High Spectral Resolution with the Keck Planet Imager and Characterizer"  
Sappey, B., Konopacký, Q., Do Ó, C. R., et al. (incl. **Sanghi, A.**), 2025, *AJ*, 169, 175.
11. "The cool brown dwarf Gliese 229B is a close binary."  
Xuan, J. W., Mérard, A., Thompson, W., et al. (incl. **Sanghi, A.**), 2024, *Nature*, 634, 1070.
12. "JWST/NIRCam 4-5  $\mu$ m Imaging of the Giant Planet AF Lep b."  
Franson, K., Balmer, W. O., Bowler, B. P., et al. (incl. **Sanghi, A.**), 2024, *ApJL*, 974, L11.
13. "Validation of elemental and isotopic abundances in late-M spectral types with the benchmark HIP 55507 AB system"  
Xuan, J. W., Wang, J. J., Finnerty, L., et al. (incl. **Sanghi, A.**), 2023, *ApJ*, 962, 10.
14. "UV-Optical Emission of AB Aur b is Consistent with Scattered Stellar Light."  
Zhou, Y., Bowler, B. P., Yang, H., **Sanghi, A.**, et al., 2023, *AJ*, 166, 220.
15. "Astrometric Accelerations as Dynamical Beacons: A Giant Planet Imaged Inside the Debris Disk of the Young Star AF Lep."  
Franson, K., Bowler, B. P., Zhou, Y., et al. (incl. **Sanghi, A.**), 2023, *ApJL*, 950, L19.
16. "Polarized radio pulsations from a new T dwarf binary."  
Vedantham, H. K., Dupuy, T. J., Evans, E. L., **Sanghi, A.**, et al., 2022, *A&A*, 675, L6.
17. "Astrometric Accelerations as Dynamical Beacons: Discovery and Characterization of HIP 21152 B, the First T-Dwarf Companion in the Hyades."  
Franson, K., Bowler, B. P., Bonavita, M., et al. (incl. **Sanghi, A.**), 2023, *AJ*, 165, 39.
18. "On the Masses, Age, & Architecture of the VHS J1256-1257AB b System."  
Dupuy, T. J., Liu, M. C., Evans E. L., et al. (incl. **Sanghi, A.**), 2023, *MNRAS*, 519, 1688.

## White Papers & Software Contributions

1. "Astronomical Optical Interferometry from the Lunar Surface"  
van Belle, G. T., Shaklan, S. B., Kulkarni, S. R., et al. (incl. **Sanghi, A.**), 2025. Report prepared for the W. M. Keck Institute for Space Studies (KISS), California Institute of Technology.
2. "The Astropy Project: Sustaining and Growing a Community-oriented Open-source Project and the Latest Major Release (v5.0) of the Core Package"  
The Astropy Collaboration, Price-Whelan, A. M., Lian Lim, P., et al. (incl. **Sanghi, A.**), 2022, *ApJ*, 935, 167.

## AAS Research Notes, White Papers, & Software Contributions

1. "A Preliminary Search for Planets and Exozodiacal Emission Around  $\alpha$  Centauri A with JWST/MIRI"  
**Sanghi, A.**, Beichman, C., Mawet, D., et al., 2025, *RNAAS*, 9, 119.
2. "Ultracool Dwarf Absolute Magnitude Versus Spectral Type Relations for Euclid and Roman Near-infrared Filters."  
**Sanghi, A.**, Liu, M. C., Best, W. M. J., et al., 2024, *RNAAS*, 8, 137. (*Zenodo Dataset, Extended arXiv Version*)
3. "Ultracool Dwarf Absolute Magnitude Versus Spectral Type Relations for JWST NIRCam Filters."  
**Sanghi, A.**, Liu, M. C., Best, W. M. J., et al., 2023, *RNAAS*, 7, 194. (*Zenodo Dataset, Extended arXiv Version*)
4. "Updated Spectral Type Polynomials for Ultracool Dwarfs with CatWISE Photometry."  
Feeser, S. J., Best, W. M. J., **Sanghi, A.**, & Liu, M. C., 2022, *RNAAS*, 6, 265.

## SELECTED PRESS RELEASES AND NEWS (\*INTERVIEWED)

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Coverage Statistics from *Critical Mention*: 800+ Mentions, 1.5+ Billion Potential Audience

### Top News Releases

- [NASA's Webb Finds New Evidence for Planet Around Closest Solar Twin. NASA\\*](#)
- [Webb finds new hints for planet around closest solar twin. ESA](#)
- [Our Nearest Sunlike Star Might Have a Planet, JWST Shows in Stunning Finding. Scientific American\\*](#)
- [Possible Planet Is Spotted Around Neighboring Alpha Centauri Star. The New York Times\\*](#)
- [Evidence Found for Planet around Closest Sun-Like Star. Caltech\\*](#)
- [Alien planet glimpsed in star's 'habitable zone'. Nature\\*](#)
- [Possible Alpha Centauri Exoplanet Likely One Of The First We'll Visit. Forbes](#)
- [New signs found of giant gas planet in 'Earth's neighbourhood'. BBC](#)
- [A giant planet may orbit our closest sunlike neighbor. ScienceNews\\*](#)
- [A planet from the Avatar movies may exist in real life. NPR](#)

### Institutional Releases

- [\[Webb Telescope\], \[JPL\], \[University of Cambridge\], \[IPAC\], \[University of Arizona\], \[SETI\]](#)

### Science Journalism

- [\[AAS Nova\], \[BBC Sky at Night\], \[Sky & Telescope\], \[New Scientist\], \[Astronomy Magazine\], \[Space.com\], \[Universe Today\], \[Times of India\], \[India Today\], \[The Independent\]](#)

### Popular Science

- [\[Bad Astronomy\], \[IFL Science\], \[Gizmodo\], \[Futurism\], \[Live Science\], \[Fraser Cain\]](#)

## SCIENTIFIC TALKS & POSTERS

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### Invited Talks

- Seminars of the Exoplanetary Systems Center, LIRA, Observatoire de Paris 10/17/2025
- CEA Paris-Saclay Department of Astronomy Seminar 10/13/2025
- University of Illinois Urbana-Champaign Journal Club 09/08/2025
- Caltech/IPAC Special Seminar 08/07/2025
- STScI Extrasolar Planetary Systems Imaging Group (EPSIG) Meeting 07/23/2025
- JWST Weekly Briefing at STScI 10/17/2024
- Canada-France-Hawaii Telescope (CFHT) Colloquium 01/25/2024

### Contributed Talks

- ExSoCal 2025: The 7th Gathering of Exoplanet Researchers in Southern California, UCLA 12/15/2025
- Cool Giant Planets and Their Systems, 30th Anniversary of 51 Pegasi b, OHP, France 10/07/2025
- UH/IIfA REU Final Presentation, University of Hawai'i at Mānoa/IIfA, Honolulu, HI 07/28/2022
- CHAMPs Exoplanet Early Career Highlight Seminar, Virtual Seminar 01/14/2022
- SURF Fall Seminar Day, California Institute of Technology, Virtual Seminar 10/16/2021
- Capital of Texas Undergraduate Research Conference, UT Austin, Virtual Conference 01/26/2021
- Society of Physics Students General Meeting, UT Austin, Virtual Meeting 11/04/2021
- Astronomy Students Association General Meeting, UT Austin, Virtual Meeting 10/17/2020
- Summer Undergraduate Research Seminar, Department of Astronomy, UT Austin, Virtual Seminar 08/14/2020

### Contributed Posters

- Sagan Summer Workshop, NExSci, Pasadena, CA 07/22/2024
- Cool Stars 22, UCSD, San Diego, CA 06/24/2024
- Extreme Solar Systems V, Christchurch, New Zealand 03/16/2024
- ExSoCal: The 5th Annual Gathering of Exoplanet Researchers in Southern California, Pasadena, CA 12/11/2023
- 241st American Astronomical Society Meeting, Seattle, WA 01/08/2023
- SACNAS National Diversity in STEM Conference, San Juan, Puerto Rico 10/27/2022

*Received SACNAS Poster Award in the Physics/Astronomy category for research poster and presentation.*

- Emerging Researchers in Exoplanet Science VII, Pennsylvania State University, State College, PA 08/01/2022
- SURE Poster Symposium, University of Hawai'i at Mānoa, Honolulu, HI 07/29/2022
- Sagan Summer Workshop, NExSci, Virtual Workshop 09/19/2021

- 237th American Astronomical Society Meeting, Virtual Meeting 01/13/2021  
*Received Chambliss Astronomy Achievement Award for research poster and presentation..*
- Undergraduate Research Forum, UT Austin, Virtual Forum 2020–2021
- Longhorn Research Poster Session, UT Austin, Virtual Forum 2020–2021  
*Received award for Best Poster Design (2021).*

## HONORS & AWARDS

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### Significant Recognitions

- NSF Graduate Research Fellowship (\$148,000) — National Science Foundation 09/2023  
*Recognizes and supports outstanding graduate students who have demonstrated the potential to be high achieving scientists and engineers, early in their careers.*
- Hertz Fellowship Finalist — Fannie and John Hertz Foundation 02/2022
- Barry M. Goldwater Scholar (\$7500) — Barry Goldwater Scholarship and Excellence in Education Foundation 03/2022  
*Support students who show exceptional promise of becoming the Nation's next generation of research leaders.*
- Thomas McGetchin Distinguished Undergrad. Award (\$5000) — Universities Space Research Association 11/2021  
*Granted to students who tackle challenging problems in aerospace engineering, space science research and exploration, demonstrate leadership, promote diversity in science and engineering, and are poised to make significant contributions to their fields.*
- NASA Texas Space Grant Consortium STEM Scholarship (\$2000) — NASA Space Grant Consortium 07/2021  
*Recognize high-quality students and encourage their consideration of graduate studies in science, technology, engineering and mathematics fields.*
- Chambliss Astronomy Achievement Student Award — American Astronomical Society 01/2021  
*Recognize exemplary research by undergraduate and graduate students who present at one of the poster sessions at the meetings of the AAS.*

### Astronomy & Physics Departmental Scholarships

- Sinclair Smith Fellowship in Astrophysics — Dept. of Astronomy, Caltech 10/2023
- Ralph Cutler Greene Endowed Scholarship (\$2500) — Dept. of Astronomy, UT Austin 12/2022  
*Outstanding senior astronomy student, awarded once per year.*
- John Kelley Texas Amateur Astronomers' Scholarship (\$3000) — Dept. of Astronomy, UT Austin 12/2021  
*Excellence in astronomy research and outreach, awarded once per year.*
- Nancy & William McMinn Endowed Presidential Scholarship (\$3175) — Dept. of Physics, UT Austin 06/2021
- John W. Cox Endowment Award (\$4320) — Dept. of Astronomy, UT Austin 05/2020

### University/College-Wide Awards

- Keck Institute of Space Studies (KISS) Graduate Student Affiliate 01/2024
- Dean's Honored Graduate (Research Distinction) — College of Natural Sciences, UT Austin 05/2023  
*The highest honor a CNS student can earn, 25-30 students a year, top 1% of each spring's graduating class.*
- Distinguished College Scholar — College of Natural Sciences, UT Austin 2021–2023
- Hou-Li Scholarship in Natural Sciences (\$1500) — College of Natural Sciences, UT Austin 07/2022
- Ralph Nelson Endowed Presidential Scholarship (\$2500) — UT Austin 05/2022
- George H. Mitchell Award (Grand Prize/STEM) (\$7000) — University Co-op, UT Austin 05/2022  
*For superior scholarly or creative achievement, awarded once per year.*
- Emory and Ella Peterson Endowed Presidential Scholarship (\$2500) — UT Austin 05/2021
- CNS Second Year Excellence Award — College of Natural Sciences, UT Austin 03/2021
- Carl Stone Benedict Scholarship (\$1000) — College of Natural Sciences, UT Austin 07/2020
- Harwood Family Endowed Scholarship in Natural Sciences (\$1500) — College of Natural Sciences, UT Austin 05/2020

### Conference 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
- Honorable Mention Research Video — Texas Research Showdown, UT Austin 03/2021
- Conference Travel Award (\$200) — Dept. of Astronomy, University of Texas at Austin 11/2020

## LEADERSHIP & SERVICE

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- LOC Member, Spirit of Lyot 6, Caltech, Pasadena 02/2026
- Lead Organizer, Caltech Astronomy Prospective Graduate Student Visit 03/2025
- Student Marshall, 75th Annual Honors Day Ceremony, UT Austin 04/2023
- Undergraduate Q&A Panelist, UT Astronomy Prospective Day 2021–2022–2023
- Goldwater Ambassador, Goldwater D&I Mentorship Program, Goldwater Scholars Community 06/2022–05/2023
- LEAP Program Mentor and Advanced Leader, Leadership and Ethics Institute, UT Austin 01/2020–12/2020
- Tutor Coordinator and College Readiness Mentor, College of Natural Sciences, UT Austin 03/2020–08/2020

## TEACHING & OUTREACH

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- Teaching Assistant, Ay 1: The Evolving Universe (Prof. Dimitri Mawet, Caltech) Spring 2025
- Teaching Assistant, Ay 123: Structure and Evolution of Stars (Prof. Kareem El-Badry, Caltech) Fall 2024
- Caltech Astro Outreach Volunteer 2023 – Present  
*Astronomy on Tap Speaker (Los Angeles and Death Valley National Park), Astronomy presentations, activities, demos, and night-sky telescope viewings at the Carnegie Observatories Open House (Pasadena, USA), Annular Solar Eclipse event at Bryce Canyon NP (UT, USA), Total Solar Eclipse event at Instituto Tecnológico de Piedras Negras (Mexico), Dark Sky Festival at Death Valley NP (CA, USA), California Dark Sky Festival (CA, USA).*
- Advanced Physics, Math, Astronomy Tutor, Sanger Learning Center, UT Austin 08/2020–05/2023  
*500+ Appointment and Drop-In Tutoring Hours.*
- “*A Journey Into the Unknown*”, Reverberance Newsletter, Udaan-Career Counselling, NPS Koramangala 03/2023
- “*Photographing Distant Alien Worlds*,” Schrödingers Pint, Darwin’s Piano Bar, Austin, TX 09/2022
- Outreach Volunteer, Astronomy Student’s Association, UT Austin 09/2019–05/2022  
*Astronomy presentation at Kealing Middle School, physics and astronomy demonstrations at Geosciences “Hot Science — Cool Talks”, STEM art activities for UT Girl Day, and public telescope viewings in and around Austin, TX.*
- Research Communication Video (300+ views), 2021 Texas Research Showdown, UT Austin 03/2021