CURRICULUM VITÆ

GOURAV KHULLAR

CONTACT INFORMATION

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EMPLOYMENT

Samuel P. Langley PITT PACC Astrophysics Postdoctoral Fellow *2022-2024*
Pittsburgh Particle Physics, Astrophysics and Cosmology Center (PITT PACC), &
Dept. of Physics and Astronomy,
University of Pittsburgh, Pittsburgh, PA, USA

(Incoming) Baum Postdoctoral Fellow for Innovative Astronomy *2024-*
Dept. of Astronomy, and the e-Science Institute,
University of Washington, Seattle, WA, USA

EDUCATION & EXPERIENCE

Ph.D., Astronomy & Astrophysics *May 2022*
University of Chicago, Chicago, IL, USA
URA Scholar, Radix Fellow, Jerry Rao Fellow

- Thesis: *Star Formation Histories in Galaxy Clusters and High-Redshift Lensed Galaxies*
- Advisor: Michael D. Gladders

Visiting Researcher, Kavli MIT *2021-22*
Massachusetts Institute of Technology,Cambridge, MA, USA
(Mentor: Michael McDonald)

Masters of Advanced Study (MASt.) in Astrophysics *2014-15*
University of Cambridge, Institute of Astronomy, Cambridge, UK
INLAKS Fellow at Fitzwilliam College

- Thesis: *Characterizing AGN and host galaxies in the Dark Energy Survey*
- Advisor: Richard McMahon

Erasmus Mundus Fellow, Student Exchange Program *2014*
Aalto University Helsinki, Finland
Dept. of Physics and Metsahovi Radio Observatory

Bachelor of Technology (B.Tech.), Engineering Physics *2010-2014*
Indian Institute of Technology Delhi (IITD) New Delhi, India

- Thesis: *Stellar Speckle Interferometry and Adaptive Optics*
- Advisor: Kedar Khare

HONORS & AWARDS

- University Research Association (URA) Visiting Scholars Program, Fermilab *2020, 2021-22*
- Physical Sciences Teaching Prize, University of Chicago *2020-21*
- Radix Fellow, Physical Sciences Division, University of Chicago *2020*
- Graduate Student Leadership Award, University of Chicago *2018, 2021*
- Jerry Rao Fellowship, University of Chicago *2015 - 2016*
- Finalist, Graduate Teaching Assistant Award, University of Chicago *2016*
- Brinson Fellowship, University of Chicago *2015*
- INLAKS Foundation Scholarship, University of Cambridge, UK *2014-15*
- Erasmus Mundus Scholarship, Aalto University, Finland *2014*

- Outstanding Contribution Award, Co-Curricular and Academic Activities, IIT Delhi *2013*
- Semester Excellence Awards, IIT Delhi *2011,2012,2013*

Grants and Resources

- JWST - Cycle 2 GO 4125 - Co-PI: Khullar - Galaxies Under Construction: Resolved Scaling Relations and Stellar Mass Assembly as Revealed by Lensed Star-Forming Clumps at Cosmic Noon **$791,000 (total)**
- JWST - Cycle 2 GO 3843 - Co-I: Khullar - Resolving Star Formation At the Star Cluster Scale Down to 30 pc at z=2.5 **$321,000 (total)**
- JWST - Cycle 1 GO 2566 - PI: Khullar - Characterizing Stellar Mass Assembly and Physical Properties in the Brightest Galaxy in the Redshift> 5 Universe **$290,000 (total)**
- Samuel P Langley PITT PACC Astrophysics Postdoctoral Fellowship (with research and DEI funding) **$270,000**
- Computing Resources, Center for Research Computing (CRC), University of Pittsburgh **2.5 million CPU Hours, Oct 2023**
- Computing Resources, Center for Research Computing (CRC), University of Pittsburgh **1.7 million CPU Hours, Jan 2023**
- DEI and Community Funding for IDEA and UChicago Astro programs **$50,000**
- University Research Association (URA) Visiting Scholars Program Funding, Fermilab **$15,000**
- Astrobites/AAS Education Grants **$7,000**

Telescope Proposals

- **JWST - Cycle 2 GO 4125 - Co-PIs: Khullar, Florian** - Galaxies Under Construction: Resolved Scaling Relations and Stellar Mass Assembly as Revealed by Lensed Star-Forming Clumps at Cosmic Noon *67.8 hours*
- **JWST - Cycle 1 GO 2566 - PI: Khullar** - Characterizing Stellar Mass Assembly and Physical Properties in the Brightest Galaxy in the Redshift> 5 Universe *20.0 hours*
- **JWST - Cycle 2 GO 3843 - PI: Matthew Bayliss, Co-I: Khullar** - Resolving Star Formation At the Star Cluster Scale Down to 30 pc at z=2.5 *14.9 hours*
- **JWST - Cycle 1 GO 2555 - PI: Rivera-Thorsen, Co-I: Khullar** - How Do Ionizing Photons Escape the Sunburst Arc? *24.2 hours*
- HST - Cycle 30, SNAP 17110 - PI: Setton, **Co-I: Khullar** - Post-starbursts from DESI: Timing quenching and morphological transformation at $1 < z < 1.3$ *409 orbits*
- HST - Cycle 28 - PI: Dahle, **Co-I: Khullar** - A bright arc behind an extreme cluster lens at $z = 1.5$ *3 orbits*
- HST - Cycle 25, SNAP 15307 - PI: Gladders, **Co-I: Khullar** - Building the SPT-HST Legacy: Imaging Massive Clusters to $z = 1.5$ *115 orbits*
- Gemini-N and Gemini-S Fast Turnaround program **PI: Khullar** - GMOS Spectroscopic follow-up of COOL-LAMPS early type galaxies *2 nights, 2021*
- **Co-I: Khullar** - Magellan (LDSS3, IMACS, FOURSTAR and FIRE) observations of high-redshift gravitationally lensed galaxies *6 nights, 2020,2021*
- **PI: Khullar** - Magellan/PISCO *griz* observations of SPT galaxy clusters *2 nights*
- Co-I: Khullar - Magellan/LDSS3 spectra observations, high-redshift DES clusters *2 nights*

Telescope Observing

49 *nights of observing experience*

- Magellan Telescopes - LDSS3, IMACS, FIRE, FOURSTAR, MIKE (33 nights) *2016-21*
- Nordic Optical Telescope - ALFOSC (5 nights) *2019-21*
- McDonald Observatory - VIRUS-P (3 nights) *2021*
- CTIO/Blanco Telescope - DECaM (7 nights, Dark Energy Survey) *2017*
- Himalayan Chandra Telescope, Indian Insitute of Astrophysics (1 night) *2012*

Presentations

Invited Talks

- STScI Galaxies and AGN Journal Club *Nov 2023*
- McGill Trottier Space Institute Astro Seminar *Nov 2023*

- UV Galaxies Conference, Iceland *June 2023*
- University of Washington Astro Seminar *April 2023*
- Carnegie Mellon University (CMU): Impossible Problems Seminar *April 2023*
- Tufts University Astro Seminar *April 2023*
- STAtistical Methods for the Physical Sciences (STAMPS, CMU) Seminar *Mar 2023*
- Survey Science Group Seminar, University of Pittsburgh *Oct 2022*
- NOIRLab Scientific Lunch *Nov 2021*
- Harvard Galaxy Clusters Meeting *Nov 2021*
- UT Austin Extragalactic Astronomy/Cosmology Seminar Series *Nov 2021*
- Yale Galaxy Lunch *Nov 2021*
- MIT Kavli Brown Bag Lunch *Oct 2021*
- High Redshift Galaxy Evolution Meeting, Harvard CfA *Oct 2021*
- Institute for Astronomy, UHawaii *Sep 2021*
- University of Massachussets Amherst Galaxy Lunch *Apr 2021*
- University of Michigan Astronomy Galaxy Meeting *Oct 2020*

Conference Talks

- The James Webb Space Telescope turns one: the birth and growth of galaxies *July 2023*
- European Astronomical Society Meeting - Gravitationally Lensed Galaxies *July 2022*
- Bayesian Deep Learning for Cosmology and Time Domain Astrophysics *June 2022*
- KIAA Forum on Gas in Galaxies for Early Career Scientists *Nov 2021*
- Spatially Resolved Spectroscopy with Extremely Large Telescopes (recorded) *Sep 2021*
- Multi-Object Spectroscopy for Statistical Measures of Galaxy Evolution (lightning) *May 2021*
- COOL-LAMPS Collaboration Meeting *June 2021*
- 237th American Astronomical Society Meeting : Characterizing the brightest known galaxy in the redshift > 5 Universe *Jan 2021*
- 237th American Astronomical Society Meeting : COOL-LAMPS Collaboration, A proposed model for inclusive undergraduate teaching and research *Jan 2021*
- Galaxy Formation and Evolution in the Era of Roman Space Telescope (Talk) *Oct 2020*
- South Pole Telescope Clusters Collaboration Meeting *2017-21*
- Sloan Giant Arcs Survey Collaboration Meetings *2018,2019*
- University of Chicago Astronomy Chalk Talk *Mar 2019*
- 232nd American Astronomical Society Meeting *June 2018*
- Dark Energy Survey Collaboration Meeting *June 2017*

Poster Presentations

- MIT First Light JWST Conference *June 2023*
- Multi-Object Spectroscopy for Statistical Measures of Galaxy Evolution *May 2021*
- 232nd American Astronomical Society Meeting *June 2018*
- 228th American Astronomical Society Meeting *June 2016*

Teaching and Mentoring

PhD Advisor

Julissa Sarmiento, *University of Pittsburgh* *2023-*

Lead Instructor

University of Chicago

- ASTR 11901 94: Physics of Stars, UChicago Immersion Program *Summer 2018*

Teaching Assistant, Graduate Mentor, and Co-Instructor *2020-*

- ASTR 29001 & 29002 Field Course in Astronomy and Astrophysics, University of Chicago
- ChicagO Optically-selected strong Lenses – Located At the Margins of Public Surveys (COOL-LAMPS) Collaboration (PI: Michael D Gladders)
- Mentored 19 undergraduate students, including (most recent known affiliation)
  - Viraj Manwadekar (Graduate Student, Stanford University)

- Katya Gozman (Graduate student, University of Michigan)
- Ezra Sukay (Graduate Student, Johns Hopkins University)
- William Cerny (Graduate Student, Yale University)
- Yunchong Zhang (Graduate Student, University of Pittsburgh)
- Finian Ashmead (Graduate Student, University of Pittsburgh)
- Jorge Sanchez (Graduate student, New Mexico State University)
- Michael Martinez (Graduate student, University of Wisconsin Madison)
- Erik Zaborowski (Graduate student, Ohio State University)

Postdoc Mentor *2022-*

- David Setton (Graduate student, University of Pittsburgh, *now Brinson Fellow at Princeton University*)
- Yasha Kaushal (Graduate student, University of Pittsburgh)
- Alex Navarre (Graduate student, University of Cincinnati)
- Arsh Kumaran (Undergraduate student, University of Pittsburgh)
- Isaac Sierra (Undergraduate student, University of Chicago)
- Simon Mork (Undergraduate student, University of Chicago)
- Aidan Cloonan (Undergraduate student, University of Chicago)
- Cecilia Steel (Undergraduate student, University of Pittsburgh)
- Natalie Malagon (Undergraduate student, University of Chicago)

Mentor, Central American-Caribbean bridge program in astrophysics (CENCA) *2022*

- Kaylan-Marie Achong (Undergraduate student, University of the West Indies, St. Augustine Campus)

Guest Lecturer

University of Chicago
- ASTR 11901 94: Physics of Stars *2017-2021*
- Yerkes Summer Institute, Space Explorers Program *2016-2019*

Indian Institute of Technology Delhi
- Astronomy Club *2014-2015*

Teaching Assistant

University of Chicago
- ASTR018200: The Origin and Evolution of the Universe *Winter 2018*
- PHSC12700: Stars *Fall 2015*
- PHSC12710: Galaxies *Winter 2016*
- PHSC12720: Exoplanets *Spring 2016*
- ASTR 18800: Philosophical Problems in Cosmology *Spring 2018*

Teaching Consultant

University of Chicago
- ASTR 11901 94: Physics of Stars *2019-2021*

Diversity, Equity & Inclusion, and Outreach

- **Co-founder, IDEA (Inclusion, Diversity, and Equity in Astronomy), University of Chicago** *2017 - 2022*
  - Grassroots collective for early-career astronomers at The University of Chicago. Successful in building community in ECRs, and peer-education on equity, inclusion and justice issues.
  - Organized EDI conferences - IDEA Week and IDEA Day, with talks by experts on mental health, increasing visibility of Black astrophysicists, supporting first-generation low-income astrophysicists, workshops on inclusive pedagogy. *2019, 2020*
  - Established a mentoring program and guaranteed relocation support for incoming students.
  - Galvanized community effort via an ensemble of working groups towards anti-racist policy-making at UChicago Astronomy and Astrophysics. *2020-present*
  - Advocated for $>$ \$**30000** in funding for Dept. Climate Survey
  - Received $>$ \$**12000** in grant funding, via:

- UChicago Inclusive Pedagogy Grants
- UChicago Physical Sciences Division Climate Grant
- National Science Policy Network DICE Grant
- UChicago Grad Council Community Wellness Fund

- **Co-founder, DAC (Direct Action Coalition), University of Pittsburgh** *2023-*
  - Grassroots initiative started by Pitt Astro members, with the intention of addressing and providing solutions to the systemic inequities, that actively affect the lived experiences of early career researchers, staff and custodial employees at the University of Pittsburgh.
  - Provides a space for constructive dialogue, and advocates for changes that will result in a safer, more equitable working environment.
- **Astrobites, the astro-ph reader's digest**
  - Ombudsperson *2021-22*
  - Chair, AAS matters *2020-21*
  - Co-chair of Administration Committee *2019-20*
  - Media Intern, 232nd AAS Meeting, American Astronomical Society *2018*
  - Co-chair of Diversity Committee *2017-18*
  - Workshop Coordinator for Astrobites in the Classroom Study *2018-19*
  - Writer for Astrobites *2016-21*
- Astronomy Conversations Presenter at Adler Planetarium *2015 - 2020*
- Teaching Race in the Core - Race and Pedagogy Working Group Workshop, UChicago *2018*
- Founding Member of Astronomy on Tap Chicago *2015 - 2017*
- Speaker, Undergraduate Journal Club, Institute of Astronomy, Cambridge *2015*
- Cubs, Brownies and Scouts Outreach, Institute of Astronomy, Cambridge *2015*
- Outreach Speaker, Galaxy formation simulations, Radio astronomy,IIT Delhi *2012,2013*
- Organizer and Co-founder, AstroWeek, IIT Delhi's astronomy outreach festival *2012,2013*

Professional Service & Leadership

Founding Member, the COOL-LAMPS collaboration — ChicagO Optically-selected strong Lenses – Located At the Margins of Public Surveys *2019-present*

Department and University Committees

- Equity and Inclusion Council, A&A, UChicago *2016-2019*
- Dean's Student Advisory Committee, UChicago *2015-2017*
- Teaching Committee and Student Representative, IoA, University of Cambridge *2014-2015*
- Academic Affairs Officer, Fitzwilliam College, University of Cambridge *2014-2015*
- President, Astronomy Club, Indian Institute of Technology Delhi *2012-2013*
- Physics Representative, Academic Committee, IIT Delhi *2012-2013*

Collaboration Meetings, Workshops and Seminars Organized

- UNCOVER JWST Collaboration Meeting *2023*
- Pittsburgh Astro Seminar Co-organizer *2023*
- COOL-LAMPS Collaboration Meeting *2021*
- UChicago Strong Gravitational Lensing Discussion Group *2018-19*
- Shared Leadership and Consensus Building towards Equity and Inclusion *2021*
- IDEA (Inclusion, Diversity, and Equity in Astronomy) Week *2020*
- Starting Equity and Social Justice Conversations in your STEM Community, National Science Policy Network *2019*
- IDEA (Inclusion, Diversity, and Equity in Astronomy) Day *2019*

Panel Reviewer, National Science Foundation *2023*

Panel Reviewer, NASA Astrophysics *2023*

Reviewer,Machine Learning and the Physical Sciences, NeurIPS *2022*

Public Press

- UChicago undergrads discover bright lensed galaxy in the early universe, UChicago News
- James Webb Space Telescope to offer humanity an unprecedented look at the Universe, UChicago News
- University Of Chicago Astrophysics Students Discover Galaxy Dating Back To Early Universe, CBS Chicago
- Graduate students recognized for exceptional teaching of undergraduates, UChicago
- PSD climate grants foster belonging while socially distanced, Physical Sciences Division, UChicago
- Starts With a Bang Podcast with Ethan Siegel
- Expand Your Perspective Podcast, Ep 1: The Universe: Black Holes, Exoplanets, and the Evolution of Stars, UChicago
- Astronomers use giant galaxy cluster as X-ray magnifying lens, UChicago News
- Astrobites White Paper, Women in Astronomy Blog
- U-M researchers confirm massive hyper-runaway star ejected from the Milky Way Disk, Michigan News
- The Physics of Toys, Yerkes Summer Institute, KICP, University of Chicago
- Spy vs. Spy, Yerkes Summer Institute, KICP, University of Chicago

Workshops

- Bayesian Deep Learning for Cosmology and Time Domain Astrophysics *2022*
- JWST Webbinar, NIRSpec IFU Data Analysis *2021*
- .AstroX Conference, STScI, Baltimore *2018*
- Data Visualization and Exploration in the LSST Era Workshop, NCSA, Urbana-Champaign *2018*
- SACNAS Midwest Meeting, University of Chicago *2018*
- Using Python to Search NASA's Astrophysics Archives (Remote), IPAC *2018*
- ALMA Proposal Workshop, Northwestern University and NRAO *2018*
- ComSciCon Chicago Science Outreach Workshop, *2017*
- Future Cosmic Surveys Workshop, University of Chicago *2016*
- CMB-S4 Meeting, University of Chicago *2016*
- Cosmology Using Low Resolution Spectroscopy in 2020s, University of Chicago *2016*
- World Wide Telescope Developer Workshop *2015*
- AstroStatistics Workshop, Royal Statistical Society, London *2014*
- Radio Astronomy Winter School, NCRA and Inter-University Centre for Astronomy and Astrophysics (IUCAA), India *2012*
- Workshop on Cosmology, Inter-University Centre for Astronomy and Astrophysics (IUCAA), India *2012*

Publications

Publications with significant contribution (indicates student supervision)*

[1] **Khullar, G.**, Setton, D., Bezanson. R, et al. *"UNCOVER: JWST/NIRCam observations of Abell 2744 reveal a diverse population of Quiescent Galaxies at Redshift $2-7$ across three orders of magnitude in Stellar Mass"*, (2023, in preparation)

[2] **Khullar, G.**, Nord, B., Ciprianovic, A, et al. *"DIGS: Deep Inference of Galaxy Spectra with Neural Posterior Estimation"*, 2022, Mach. Learn.: Sci. Technology, 3, 04LT04, ADS

[3] Vanzella E., Claeyssens A., Welch B., Adamo A., Coe D., Diego J. M., Mahler G., **Khullar, G.**, et al., *"JWST/NIRCam Probes Young Star Clusters in the Reionization Era Sunrise Arc"*, 2023, ApJ, 945, 53, ADS

[4] *Martinez M. N., Napier K. A., Cloonan A. P., Sukay E., Gozman K., Merz K., **Khullar, G.**, et al., *"COOL-LAMPS. III. Discovery of a Wide Separation Quasar Lensed by a Merging Galaxy Cluster"*, 2023, ApJ, 946, 2, ADS

[5] **Khullar, G.**, Bayliss, M.B., Gladders, M.D., et al. *"Synthesizing Stellar Populations in South Pole Telescope Galaxy Clusters: I. Measuring the Ages of Quiescent Members in the SPT-GMOS and SPT Hi-z Clusters"* 2022, ApJ, 934, 177, ADS

[6] Kim, K.J., Bayliss, M.B., Noble, A.G., **Khullar, G.** et al., *"A Gradual Decline of Star Formation since Cluster Infall: New Kinematic Insights into Environmental Quenching at $0.3 < z < 1.1$"*, 2022, arXiv:2207.12491

[7] Setton, D.J., Dey, B., **Khullar, G.**, Bezanson, R., Newman, J.A., et al., *"DESI Survey Validation Spectra Reveal an Increasing Fraction of Recently Quenched Galaxies at $z\sim1$"*, 2022, arXiv:2212.05070

[8] *Zhang, Y., Manwadkar, V., Gladders, M.D., **Khullar, G.** et al., *"COOL-LAMPS IV: A Sample of Bright Strongly-Lensed Galaxies at $3<z<4$"*, 2022, arXiv:2212.06902

[9] *Sukay, E., **Khullar, G.**,[...], Gladders, M.D., Rigby, J.R., Sharon, K., et al. 2022, *"COOL-LAMPS. II. Characterizing the Size and Star Formation History of a Bright Strongly Lensed Early-Type Galaxy at Redshift 1"* 2022, ApJ, 940, 42, ADS

[10] Poh, J., Samudre, A., Ćiprijanović, A., Nord, B., **Khullar, G.** et al., *"Strong Lensing Parameter Estimation on Ground-Based Imaging Data Using Simulation-Based Inference"*, 2022, arXiv:2211.05836

[11] **Khullar, G.**, Gozman, K.,[...], Gladders, M.D., Rigby, J.R., Sharon, K., et al., *"COOL-LAMPS. I. An Extraordinarily Bright Lensed Galaxy at Redshift 5.04"* 2021, ApJ, 906, 107, ADS

[12] **Khullar, G.**, Bleem, L.E., Bayliss, M.B., Gladders, M.D., et al. *"Spectroscopic Confirmation of Five Galaxy Clusters at $z > 1.25$ in the 2500 sq. deg. SPT-SZ Survey"* 2019, ApJ, 870, 7, ADS

[13] Yu-Yang Hsiao, T., Coe, D., Abdurrouf,[...] **Khullar, G.** et al. 2022, *"JWST reveals a possible redshift 11 galaxy merger in triply-lensed MACS0647 JD"*: arXiv:2210.14123

[14] Florian, M.K., Rigby, J.R.,[...] **Khullar, G.** et al., "Spatial Variation in Strong Line Ratios and Physical Conditions in Two Strongly Lensed Galaxies at z $\sim$ 1.4", 2021, ApJ, 916,50, ADS

[15] Strazzullo, V., Pannella, M., Mohr, J.J., [...], **Khullar, G.** et al., *"Galaxy populations in the most distant SPT-SZ clusters - I. Environmental quenching in massive clusters at $1.4 < z < 1.7$"*, 2019, AA, 622, A117, ADS

[16] Hattori, K., Valluri, Monica,[...] and **Khullar, G.**, *"Origin of a Massive Hyper-runaway Subgiant Star LAMOST-HVS1: Implication from Gaia and Follow-up Spectroscopy"* 2019, ApJ, 873, 116, ADS

[17] **Khullar G.**, Kohler, S., Konchady, T., et al. 2019, *"Astrobites as a Community-led Model for Education, Science Communication, and Accessibility in Astrophysics"*, 2020 Decadal Survey on Astronomy and Astrophysics, arXiv:1907.09496

Co-Authored Publications

[18] Weaver, J.R., Cutler, S.E., Pan, R., Whitaker, K.E., Labbe, I., Price, S.H., [...], **Khullar G.** et al., *"The UNCOVER Survey: A first-look HST+JWST catalog of 50,000 galaxies near Abell 2744 and beyond"*, 2023, arXiv:2301.02671

[19] Wang, B., Leja, J., Bezanson, R., Johnson, B.D., **Khullar G.**, Labbé, I., et al., *"Inferring More from Less: Prospector as a Photometric Redshift Engine in the Era of JWST"*, 2023, ApJ, 944, L58, ADS

[20] Masterson, M., McDonald, M., Ansarinejad, B., Bayliss, M., Benson, B.A., Bleem, L.E., [...], **Khullar G.** et al., *"Evidence for AGN-regulated Cooling in Clusters at z 1.4: A Multiwavelength View of SPT-CL J0607-4448"*, 2023, ApJ, 944, 164, ADS

[21] Strazzullo, V., Pannella, M., Mohr, J.J., Saro, A., Ashby, M.L.N., [...], **Khullar G.** et al., *"Galaxy populations in the most distant SPT-SZ clusters. II. Galaxy structural properties in massive clusters at* $z \sim 1.4 - 1.7$*"*, 2023, Astronomy and Astrophysics, 669, A131, ADS

[22] Calzadilla, M.S., Bleem, L.E., McDonald, M., Gladders, M.D., [...], **Khullar G.** et al., *"SPT-CL J2215-3537: A Massive Starburst at the Center of the Most Distant Relaxed Galaxy Cluster"*, 2023, arXiv:2303.10185

[23] Furtak, L.J., Zitrin, A., Weaver, J.R., Atek, H., Bezanson, R., Labbe, I., [...], **Khullar G.** et al., *"UNCOVERing the extended strong lensing structures of Abell 2744 with the deepest JWST imaging"*, 2022, arXiv:2212.04381

[24] Bezanson, R., Labbe, I., Whitaker, K.E., Leja, J., Price, S.H., Franx, M., [...] : **Khullar G.** et al., *"The JWST UNCOVER Treasury survey: Ultradeep NIRSpec and NIRCam ObserVations before the Epoch of Reionization"*, 2022, arXiv:2212.04026

[25] Sharon, K., Mahler, G., Rivera-Thorsen, T.E., Dahle, H., Gladders, M.D., Bayliss, M.B., [...], **Khullar G.** et al., *"The Cosmic Telescope That Lenses the Sunburst Arc, PSZ1 G311.65-18.48: Strong Gravitational Lensing Model and Source Plane Analysis"*, 2022, ApJ, 941, 203, ADS

[26] Verrico, M., Setton, D.J., Bezanson, R., Greene, J.E., Suess, K.A., Goulding, A.D., [...], and **Khullar G.**, *"Merger Signatures are Common, but not Universal, In Massive, Recently-Quenched Galaxies at* $z \sim 0.7$*"*, 2022, arXiv:2211.16532

[27] Welch, B., Coe, D., Zackrisson, E., de Mink, S.E., Ravindranath, S., Anderson, J., [...], **Khullar G.**, et al., *"JWST Imaging of Earendel, the Extremely Magnified Star at Redshift* $z = 6.2$*"*, 2022, ApJ, 940, L1, ADS

[28] Ruppin, F., McDonald, M., Hlavacek-Larrondo, J., Bayliss, M., Bleem, L.E., Calzadilla, M., [...], **Khullar G.**, et al., *"Redshift Evolution of the Feedback / Cooling Equilibrium in the Core of 48 SPT Galaxy Clusters: A Joint Chandra-SPT-ATCA analysis"*, 2022, arXiv:2207.13351

[29] Ghirardini, V., Bulbul, E., [...], **Khullar, G.**, *"Evolution of the Thermodynamic Properties of Clusters of Galaxies out to Redshift of 1.8"*, 2021, ApJ, 910, 1, ADS

[30] Armus, L., Megeath, S.T., [...], **Khullar, G.** et al., *"Great Observatories: The Past and Future of Panchromatic Astrophysics"*, 2021, 2020 Decadal Survey on Astronomy and Astrophysics, arXiv:2104.00023

[31] Ruppin, F., McDonald, M., [...], **Khullar, G.,** et al. 2020, *"Stability of Cool Cores During Galaxy Cluster Growth: A Joint Chandra/SPT Analysis of 67 Galaxy Clusters Along a Common Evolutionary Track Spanning 9 Gyr"*, ADS

[32] Bayliss, M.B., McDonald, M., Sharon, K., Gladders, M.D., [...], **Khullar, G.**, *"An X-ray Detection of Star Formation In a Highly Magnified Giant Arc"*, 2020, Nature Astronomy, Volume 4, 159, ADS

[33] Bleem, L.E., Bocquet, S., Stalder, B., Gladders, M.D., [...] **Khullar, G.** et al., *"The SPTpol Extended Cluster Survey"* 2020, ApJS, 247, 25, ADS

[34] Huang, N., Bleem, L.E., Stalder, B., [...] **Khullar, G.** et al., *"Galaxy Clusters Selected via the Sunyaev-Zel'dovich Effect in the SPTpol 100-Square-Degree Survey"* 2020, AJ, 159, 110, ADS

[35] Mahler, G., Sharon, K., Gladders, M.D., [...], **Khullar, G.**, *"Strong Lensing Model of SPT-CLJ0356-5337, a Major Merger Candidate at Redshift 1.0359"*, 2019, ApJ, 894, 150, ADS

[36] Bocquet, S., Dietrich, J.P., Schrabback, T., Bleem, L.E., [...] **Khullar, G.** et al., *"Cluster Cosmology Constraints from the 2500 deg2 SPT-SZ Survey: Inclusion of Weak Gravitational Lensing Data from Magellan and the Hubble Space Telescope"* 2019, ApJ, 878, 55, ADS

[37] McDonald, M., Allen, S.W., [...] **Khullar, G.** et al., *"A Detailed Study of the Most Relaxed SPT-Selected Galaxy Clusters: Cool Core and Central Galaxy Properties"* 2019, ApJ, 870, 85, ADS

[38] Bulbul, E., Chiu, I., Mohr, J.J., [...] **Khullar, G.** et al., *"X-ray Properties of SPT Selected Galaxy Clusters at 0.2<z<1.5 Observed with XMM-Newton"* 2019, ApJ, 871, 50, ADS

[39] Abbott, T. M. C., Allam, S., [...], **Khullar, G.**, et al. *"The Dark Energy Survey Data Release 1"* 2018, ApJS, 239, 18, ADS

Complete NASA ADS Publication Record

References

Prof. Michael D Gladders
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Prof. Rachel Bezanson
University of Pittsburgh, Pittsburgh, PA, USA
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Dr. Jane R Rigby
NASA Goddard Space Flight Center, Greenbelt, MD, USA
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Prof. Keren Sharon
University of Michigan, Ann Arbor, Michigan, USA
kerens@umich.edu

Prof. Matthew B Bayliss
University of Cincinnati, Cincinnati, Ohio, USA
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