

Maryum Sayeed

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EDUCATION

Columbia University	2021 – Present
PhD in Astronomy (Advisors: Melissa K. Ness & Daniel Huber)	
– MPhil in Astronomy (2024), MA in Astronomy (2023)	
– LSSTC Data Science Fellow	2021 – 2023
– National Osterbrock Leadership Fellow	2021 – 2023
University of British Columbia	2015 – 2020
B.Sc in Honors Physics & Astronomy	
– <i>Honors Thesis: Axion Quark Nuggets: Using Gamma-ray and X-ray Data of Galaxy Clusters to Detect Dark Matter</i>	

GRANTS, AWARDS, & HONORS

NSERC Canada Graduate Scholarship , Government of Canada (<i>63k CAD</i>)	2022 – 2025
National Osterbrock Leadership Fellowship , AAS (<i>4k USD</i>)	2021
LSSTC Data Science Fellowship , LSSTC	2021
Columbia University Graduate Fellowship , Columbia University	2021 – 2026
Trottier Excellence Grant , Institute for Research on Exoplanets (<i>6k CAD</i>)	2018
Choquette Family Foundation Global Award (declined) , UBC (<i>10k CAD</i>)	2018
BSc with Distinction , University of British Columbia	2020
Dean's Honour List , University of British Columbia	2020
Dean's Honour List , University of British Columbia	2019
Rhodes Scholar (nominated) , University of British Columbia	2019

TELESCOPE TIME

ESO VLT P116 Phase 2 (ESPRESSO) → 27.0 hours (PI)	2025
<i>Measuring binarity of lithium-rich red giants (97k USD)</i>	
Las Campanas Observatory, Magellan (MIKE) → 1.5 nights (co-I)	2025
<i>A high precision analysis of lithium richness along the red giant branch (45k USD)</i>	
ESO VLT P113 Phase 3 (ESPRESSO) → 27.1 hours (PI)	2024
<i>Measuring binarity of lithium-rich red giants (97k USD)</i>	
ESO VLT P112 Phase 2 (ESPRESSO) → 27.1 hours (PI)	2023
<i>Measuring binarity of lithium-rich red giants (97k USD)</i>	
MDM McGraw–Hill (1.3m Telescope) → 5 nights (co-I)	2022
<i>Photometric Confirmation and Ephemeris Refinement of TESS Planet Candidates</i>	

PUBLICATIONS

First Author

1. **M. Sayeed**, S. Yang, G. Cinquegrana, *et al.*, (2025), “[Probing Binary Architectures of Lithium-Rich Giants in GALAH with COSMIC and Stellar Models](#)”, arXiv e-prints
2. **M. Sayeed**, D. Huber, A. Chontos, and Y. Li, (2025), “[A Homogeneous Catalog of Oscillating Solar-type Stars Observed by the Kepler Mission and a New Amplitude Scaling Relation Including Chromospheric Activity](#)”, AJ, 170, 4
3. **M. Sayeed**, R. Angus, T. A. Berger, *et al.*, (2025), “[Exoplanet Occurrence Rate with Age for FGK Stars in Kepler](#)”, AJ, 169, 2
4. **M. Sayeed**, M. K. Ness, B. T. Montet, *et al.*, (2024), “[Many Roads Lead to Lithium: Formation Pathways For Lithium-rich Red Giants](#)”, ApJ, 964, 1
5. **M. Sayeed**, D. Huber, A. Wheeler, and M. K. Ness, (2021), “[The Swan: Data-driven Inference of Stellar Surface Gravities for Cool Stars from Photometric Light Curves](#)”, AJ, 161, 4

Co-Author

6. Y. Lu, I. L. Colman, **M. Sayeed**, *et al.*, (2025), “[Evidence of Truly Young High- \$\alpha\$ Dwarf Stars](#)”, AJ, 169, 3
7. M. N. Lund, S. Basu, A. Bieryla, *et al.*, (2024), “[The K2 Asteroseismic KEYSTONE sample of Dwarf and Subgiant Solar-Like Oscillators. I. Data and Asteroseismic parameters](#)”, A&A, 688
8. J. Tayar, J. K. Carlberg, C. Aguilera-Gómez, and **M. Sayeed**, (2023), “[Lithium in Kepler Red Giants: Defining Normal and Anomalous](#)”, AJ, 166, 2
9. S. Mathur, R. A. García, S. Breton, *et al.*, (2022), “[Detections of solar-like oscillations in dwarfs and subgiants with Kepler DR25 short-cadence data](#)”, A&A, 657
10. A. Chontos, D. Huber, **M. Sayeed**, and P. Yamsiri, (2022), “[pySYD: Automated measurements of global asteroseismic parameters](#)”, The Journal of Open Source Software, 7, 79

ADVISING

Madeline Maldonado Gutierrez , Columbia University (undergraduate)	Jan 2025 – May 2025
Selina Yang , Columbia University → Cornell University	May 2023 – Dec 2024
Forrest Weintraub , Columbia University (undergraduate)	Sep 2023 – Dec 2023
Leah McGee-Gold , Columbia University (undergraduate)	May 2022 – Aug 2022

TALKS

Contributed Talks

<i>Testing Binarity of Lithium-Rich Red Giants</i> → Cool Stars 2024	2024
<i>Formation Pathways for Lithium-Rich Red Giants</i> → GothamFest NYC	2023
<i>Investigating the Effects of Axion Quark Nuggets using X-ray and Gamma-ray Observations</i> → UBC	2020

Talks

<i>Testing Binarity of Lithium-Rich Giants</i> → Journal Club, STScI	2025
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<i>Testing Binarity of Lithium-Rich Giants</i> → AstroCoffee, JHU	2025
<i>Formation Pathways for Lithium-Rich Red Giants</i> → Montet Group Meeting, UNSW	2023
<i>Formation Pathways for Lithium-Rich Red Giants</i> → G.A.S.P, Australian National University	2023
<i>Glitch-PE: impact of glitches on parameter estimation of GW signals</i> → LIGO Group Meeting	2020
<i>Inference of Stellar Parameters Using Data-Driven Modelling</i> → Institute for Astronomy UH	2019
<i>Modelling multi-wavelength observations of IRS 48</i> → National Research Council of Canada	2019
<i>Hunt for Solar Oscillations – K2 Observations of Uranus</i> → Institute for Research on Exoplanets	2018

TEACHING

Graduate Teaching Assistant, Columbia University

Spring 2023: Theories of the Universe (UN1610)

Fall 2022: Astronomy Lab I (UN1903)

Spring 2022: Earth, Moon & Planets (UN1403)

Fall 2021: Stars & Atoms (UN1836)

Undergraduate Teaching Assistant, University of British Columbia

Spring 2018 – Fall 2019: Energy & Waves (PHYS101)

SOFTWARE

Lead Developer, [The Swan](#) → inference of stellar surface gravity via linear regression

Co-Developer, [pySYD](#) → automated measurements of global asteroseismic parameters

SERVICE

Graduate Mentorship Program → Coordinator 2022 – 2025

Colloquium Organizing Committee → Graduate Coordinator 2023 – 2024

Undergraduate/Graduate Mentorship Program → Mentor 2021 – 2025

OUTREACH

Astrobites → Author, Editor, Website Chair 2022 – 2024

Dec 2022: [One Plot to Rule Them All!](#)

Dec 2022: [Honey, I Shrunk the Orbit!](#)

Oct 2022: [Astro Grads United](#)

Jun 2022: [To Gaia & Beyond!](#)

May 2022: [With Great Power Comes Great Asteroseismology](#)

Apr 2022: [Women's History Month: Dr. Burçin Mutlu-Pakdil](#)

Mar 2022: [Women's History Month: Dr. Munazza Alam](#)

Jan 2022: [Make it or Brake it](#)

Skype A Scientist → Volunteer 2021 – 2025

UBC Astronomy Club → VP External 2015 – 2020

UBC Physics Society → VP Academic 2016 – 2017

POSTERS

Sayed, M., Ness, M., Montet, B. “Formation Pathways for Lithium Enriched Red Giants in GALAH & TESS”, July 2022

Sayed, M., Huber, D., Chontos, A., “A Homogeneous Catalog of Kepler Solar-like Oscillators Observed in Short Cadence”, TESS Science Conference II, Aug 2021 ([online](#))

Chontos, A., **Sayed, M.**, Huber, D., “pySYD: Automated Measurements of Global Asteroseismic Parameters”, TESS Science Conference II, Aug 2021 ([online](#))

Sayed, M., “Data-Driven Inference of Stellar Surface Gravities for Cool Stars from Photometric Light Curves”, American Astronomical Society Winter Meeting (237), Jan 2021

Sayed, M., “The Gravity of Machine Learning: Using Linear Regression to Infer Stellar Surface Gravity”, CASCA 2020, May 2020

Sayed, M., “Inference of Stellar Parameters Using Data-Driven Modelling”, American Astronomical Society Winter Meeting (235), Jan 2020