

# Maryum Sayeed

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 NASA ADS

 ~/maryumsayeed.github.io

## EDUCATION

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### Columbia University

Ph.D. in Astronomy

Expected 2026

- Advisors: Melissa K. Ness and Daniel Huber
- Thesis: Studying Anomalous Stellar Populations with Spectroscopy and Asteroseismology
- LSSTC Data Science Fellow 2021 – 2023
- National Osterbrock Leadership Fellow 2021 – 2023

Master of Philosophy in Astronomy

2024

Master of Arts in Astronomy

2023

### University of British Columbia

2015 – 2020

B.Sc in Honors Physics & Astronomy

## GRANTS, AWARDS, & HONORS

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

## PUBLICATIONS

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Summary: 12 total, 6 first-author, 6 co-author, 136+ citations

First Author: 6 publications with 43+ citations

1. **M. Sayeed**, A. R. Casey, B. T. Montet, *et al.*, (2025), “[Looking for Companionship: Radial Velocity Follow-Up of Lithium-Rich Giants with ESPRESSO](#)”, arXiv e-prints, *Submitted to ApJ*
2. **M. Sayeed**, S. F. Yang, G. Cinquegrana, *et al.*, (2025), “[Probing Binary Architectures of Lithium-rich Giants in GALAH with COSMIC and Stellar Models](#)”, *ApJ*, 991, 1, *Citations: 1*
3. **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, *Citations: 1*
4. **M. Sayeed**, R. Angus, T. A. Berger, *et al.*, (2025), “[Exoplanet Occurrence Rate with Age for FGK Stars in Kepler](#)”, *AJ*, 169, 2, *Citations: 4*

5. **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, *Citations: 20*
6. **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, *Citations: 14*

Co-Author: 6 publications with 93+ citations

7. Y. Lu, C. Manea, **M. Sayeed**, *et al.*, (2025), “[Spectroscopic Follow-up of Young High- Dwarf Star Candidates: Still Likely Genuinely Young](#)”, arXiv e-prints, *Submitted to AJ*
8. Y. Lu, I. L. Colman, **M. Sayeed**, *et al.*, (2025), “[Evidence of Truly Young High- \$\alpha\$  Dwarf Stars](#)”, *AJ*, 169, 3, *Citations: 6*
9. 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, *Citations: 8*
10. J. Tayar, J. K. Carlberg, C. Aguilera-Gómez, and **M. Sayeed**, (2023), “[Lithium in Kepler Red Giants: Defining Normal and Anomalous](#)”, *AJ*, 166, 2, *Citations: 9*
11. 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, *Citations: 29*
12. 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, *Citations: 40*

## TELESCOPE TIME

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Principal Investigator: 80+ hours

<b>ESO VLT Phase 2 (ESPRESSO) → 27.0 hours</b>	2025
<i>Measuring binarity of lithium-rich red giants</i>	
<b>ESO VLT Phase 3 (ESPRESSO) → 27.1 hours</b>	2024
<i>Measuring binarity of lithium-rich red giants</i>	
<b>ESO VLT Phase 2 (ESPRESSO) → 27.1 hours</b>	2023
<i>Measuring binarity of lithium-rich red giants</i>	

Co-Investigator: 6.5 nights

<b>Las Campanas Observatory, Magellan (MIKE) → 1.5 nights</b>	2025
<i>A high precision analysis of lithium richness along the red giant branch</i>	
<b>MDM McGraw–Hill (1.3m Telescope) → 5 nights</b>	2022
<i>Photometric Confirmation and Ephemeris Refinement of TESS Planet Candidates</i>	

## ADVISING

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

## SOFTWARE

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

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

## TALKS

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### Contributed Talks

*Testing Binarity of Lithium-Rich Red Giants* → Cool Stars 2024 2024

*Formation Pathways for Lithium-Rich Red Giants* → GothamFest NYC 2023

*Investigating the Effects of Axion Quark Nuggets using X-ray and Gamma-ray Observations* → UBC 2020

### Invited Seminars and Talks

*Looking for Companionship: Binarity of Lithium-Rich Giants* → Stars Seminar, OSU 2025

*Looking for Companionship: Binarity of Lithium-Rich Giants* → Journal Club, STScI 2025

*Looking for Companionship: Binarity of Lithium-Rich Giants* → AstroCoffee, JHU 2025

*Formation Pathways for Lithium-Rich Red Giants* → Montet Group Meeting, UNSW 2023

*Formation Pathways for Lithium-Rich Red Giants* → G.A.S.P., Australian National University 2023

*Glitch-PE: impact of glitches on parameter estimation of GW signals* → LIGO Group Meeting 2020

*Inference of Stellar Parameters Using Data-Driven Modelling* → Institute for Astronomy UH 2019

*Modelling multi-wavelength observations of IRS 48* → National Research Council of Canada 2019

*Hunt for Solar Oscillations – K2 Observations of Uranus* → Institute for Research on Exoplanets 2018

## TEACHING

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**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)

## SERVICE

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**Graduate Mentorship Program** → Coordinator 2022 – 2025

**Colloquium Organizing Committee** → Graduate Coordinator 2023 – 2024

**Undergraduate/Graduate Mentorship Program** → Mentor 2021 – 2025

## OUTREACH

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<b>Astrobites</b> → Author, Editor, Website Chair	2022 – 2024
Dec 2022: <a href="#">One Plot to Rule Them All!</a>	
Dec 2022: <a href="#">Honey, I Shrunk the Orbit!</a>	
Oct 2022: <a href="#">Astro Grads United</a>	
Jun 2022: <a href="#">To Gaia &amp; Beyond!</a>	
May 2022: <a href="#">With Great Power Comes Great Asteroseismology</a>	
Apr 2022: <a href="#">Women’s History Month: Dr. Burçin Mutlu-Pakdil</a>	
Mar 2022: <a href="#">Women’s History Month: Dr. Munazza Alam</a>	
Jan 2022: <a href="#">Make it or Brake it</a>	
<b>Skype A Scientist</b> → Volunteer	2021 – 2025
<b>UBC Astronomy Club</b> → VP External	2015 – 2020
<b>UBC Physics Society</b> → VP Academic	2016 – 2017

## POSTERS

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- Sayeed, M.**, Ness, M., Montet, B. “Formation Pathways for Lithium Enriched Red Giants in GALAH & TESS”, July 2022
- Sayeed, 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., **Sayeed, M.**, Huber, D., “pySYD: Automated Measurements of Global Asteroseismic Parameters”, TESS Science Conference II, Aug 2021 ([online](#))
- Sayeed, M.**, “Data-Driven Inference of Stellar Surface Gravities for Cool Stars from Photometric Light Curves”, American Astronomical Society Winter Meeting (237), Jan 2021
- Sayeed, M.**, “The Gravity of Machine Learning: Using Linear Regression to Infer Stellar Surface Gravity”, CASCA 2020, May 2020
- Sayeed, M.**, “Inference of Stellar Parameters Using Data-Driven Modelling”, American Astronomical Society Winter Meeting (235), Jan 2020