

LILI ALDERSON

lili-alderson.com

lili.alderson@bristol.ac.uk — ORCID: [0000-0001-8703-7751](https://orcid.org/0000-0001-8703-7751)

EDUCATION

- PhD in Astrophysics - University of Bristol** Sep 2020 - present
 - Supervisor: Dr. Hannah Wakeford
 - Research Focus: Exoplanet Atmospheres with HST and JWST
- MPhys Astrophysics with a Year Abroad** Sep 2016 - Jul 2020
University of Southampton & Center for Astrophysics | Harvard-Smithsonian First Class
 - Thesis Title : LRG-BEASTS: Ground-based Transmission Spectroscopy of the Atmosphere of the Highly Inflated Hot-Saturn WASP-21b
 - One of the 5 best academically performing students and selected to spend year in research at the Center for Astrophysics | Harvard-Smithsonian, in Cambridge, MA, USA

TEACHING AND LEADERSHIP

- Mentoring - University of Bristol** 2023 - Present
 - Jude Young - High School Summer Research Project Student
- Member of Astrobites Collaboration - Astrobites.org** Jan 2021 - present
 - Regular writer & editor of astrophysics research paper summaries aimed at undergrad students.
 - Collaboration roles include: Co-Chair & Member of Administrative Committee, Chair & Member of Scheduling Committee, Member of DEI Committee, Ombudsperson
 - Author of 17 articles, editor of 26. 10 articles selected by AAS Nova for feature.
- Teaching Support Assistant - University of Bristol** Oct 2020 - present
 - PHYS10600 Stars & Planets, Y1 undergrad course - 30hrs/semester, ~ 90 students
 - PHYS24010 Cosmology, Y2 undergrad course - mark 66% of assessed grade, ~ 120 students
 - PHYS34013 Stellar Structure & Evolution, Y3 undergrad course - 6hrs/semester, ~ 40 students
- Student President of the School of Physics and Astronomy - University of Southampton** Jun 2018 - Jul 2019
 - Elected by peers to oversee student-staff relations, managing a team of 12 course representatives
 - Ran quarterly Staff-Student Liaison Committee meetings to address and resolve raised issues
 - Gave University Open-Day subject talks to audiences of up to 400 prospective students & parents

GRANTS & AWARDS

- **PI** on 1 Competitively Awarded JWST GO Program
14.22 Total Hours: GO-4105
- **Co-I** on 5 Competitively Awarded JWST GO Programs
271.9 Total Hours: GO-3969, GO-3838, GO-3154, GO-2667, GO-2512
- **Co-I** on 3 Competitively Awarded HST GO Programs
165 Total Orbits: GO-17418, GO-17183, GO-16695
- **2022 RAS Travel Grant** - £1000 to attend Exoplanets IV in Las Vegas, NV, USA
- **2020 Most Outstanding Performance on an MPhys Degree**, University of Southampton
- **2020 Best Project by a Physics Final Year Research Finalist** University of Southampton

PROFESSIONAL ACTIVITIES & SERVICE

- **2023-Present** Associate Fellow of Advance HE
- **2022-Present** Co-Organiser of University of Bristol (Exo)Planetary Journal Club
- **2022-Present** Co-Investigator [HUSTLE Collaboration](#) (HST GO-17183)
- **2021-Present** Project Level Member [JWST Telescope Scientist Team](#) Deep Reconnaissance of Exoplanet Atmospheres using Multi-instrument Spectroscopy (TST-DREAMS GTO)
- **2021-Present** Co-Investigator [COMPASS Collaboration](#) (JWST GO-2512)
- **2021-Present** Transmission Working Group Member [JWST Transiting Exoplanet Community Early Release Science Program](#) (ERS-1366)
- **2020-Present** Member [STARGATE Collaboration](#)
- **2020-2022** Astrophysics Postgraduate Student Representative, University of Bristol
- **Conference Posters** 6 total [1 (2023), 2 (2022), 1 (2021), 2 (2020)]
- **Journals Refereed:** AAS Journals

Within Astrobites:

- **2023-Present** Co-Chair of Administrative Committee
- **2022-Present** Member of Administrative Committee
- **2021-Present** Member of Scheduling Committee
- **2022-2023** Chair of Scheduling Committee
- **2022-2023** Ombudsperson
- **2021-2023** Member of Diversity, Equity and Inclusion Committee

CONFERENCES AND PROFESSIONAL TALKS

Invited Conference Talks

- **Nov 2022** - Celebrating JWST's first six months of exoplanet data, Ringberg Castle, Germany

Contributed Conference Talks

- **Jul 2023** - 44th Bay Area Exoplanet Meeting, University of California Santa Cruz
- **Jul 2023** - OWL Exoplanet Summer Program, University of California Santa Cruz
- **Mar 2023** - Exoplanet Atmospheres with JWST Meeting, University of Oxford
- **Jul 2022** - UK National Astronomy Meeting, University of Warwick
- **Apr 2021** - UK Exoplanet Community Meeting, University of Birmingham (Online)
- **Jan 2021** - UKRI STFC Introductory Course in Astronomy for New Research Students (Online)

Seminars and Colloquia

- **Dec 2023** - Astrophysics Seminar, University of Bristol
- **Oct 2023** - Stars, Planets, and ISM Seminar, The University of Texas at Austin (Online)
- **Jun 2023** - Astronomy Seminar, Carnegie Earth & Planets Laboratory (Online)
- **Apr 2023** - Earth & Space Sciences Department Seminar, Columbus State University (Online)
- **Mar 2023** - Exoplanet Seminar, NASA Goddard
- **Mar 2023** - Planetary and exoplanetary Astronomy Lunch Seminar, University of Maryland
- **Jun 2022** - Astronomical Data Group Community Meeting, CCA Flatiron Institute (Online)
- **May 2022** - Astrophysics Seminar, American Museum of Natural History (Online)
- **May 2022** - Planetary Lunch, University of California: Santa Cruz (Online)
- **Apr 2022** - CIERA Science Happy Hour, Northwestern University (Online)
- **May 2020** - Exoplanet Seminar Series, Center for Astrophysics | Harvard-Smithsonian (Online)
- **May 2020** - STARGATE Collaboration Seminar (Online)

Science Communication

- **Dec 2023** Invited Speaker First Tech Challenge GB South West Scrimmage
- **Dec 2023** Invited Speaker Bournemouth School for Girls Community Lecture Series
- **Jun 2023** Chaos Physfest
- **May 2023** Invited Speaker Pint of Science Bristol
- **Nov 2022** Light From Distant Worlds Film
- **Sep 2022** Filton Avenue Primary School Space Week Talk
- **Jul 2021** Aerospace Bristol Museum Talk

PUBLICATIONS

Refereed Publications: 3 first author, 11 co-author

- **Alderson, L.** et al., *JWST COMPASS: NIRSpec/G395H Transmission Observations of the Super-Earth TOI-836b*, submitted
- **Alderson, L.** et al., *Early Release Science of the Exoplanet WASP-39b with JWST NIRSpec G395H*, 2023, Nature 614, 664–669
- **Alderson, L.**, et al. *A Comprehensive Analysis of WASP-17b’s Transmission Spectrum from Space-Based Observations*, 2022, MNRAS, 512, 4185
- **Alderson, L.**, et al. *LRG-BEASTS: ground-based detection of sodium and a steep optical slope in the atmosphere of the highly inflated hot-saturn WASP-21b*, 2020, MNRAS, 497, 5182
- Waalkes, W., et al., *Quantifying the Transit Light Source Effect on AU Microscopii: Measurements of Spot Temperature and Coverage with High-Resolution Spectroscopy and Multi-Color Photometry*, 2023, ApJ, in press, arXiv:2310.17043
- May, E. M. & MacDonald, R. J., et al., *Double Trouble: Two Transits of the Super-Earth GJ 1132 b Observed with JWST NIRSpec G395H*, 2023, ApJL, in press, arXiv:2310.10711
- Grant, D., et al., *JWST-TST DREAMS: Quartz Clouds in the Atmosphere of WASP-17b*, 2023, ApJL, 956, L29
- Grant, D., et al., *Detection of CO’s fundamental band structure in WASP-39b’s atmosphere with JWST NIRSpec G395H*, 2023, ApJL, 949, L15
- Libralato, M., et al., *JWST-TST Proper Motions: I. High-Precision NIRISS Calibration and LMC Kinematics*, 2023, ApJ, 950, 101
- Tsai, S-M., et al., 2023, *Photochemically produced SO₂ in the atmosphere of WASP-39b*, Nature, 617, 483-487
- Rustamkulov, Z., et al., *Early Release Science of the Exoplanet WASP-39b with JWST NIRSpec PRISM*, 2023, Nature, 614, 659–663
- Ahrer, E-M., et al., *Early Release Science of the Exoplanet WASP-39b with JWST NIRCам*, 2023, Nature, 614, 653–658
- Feinstein, A.D., et al., *Early Release Science of the Exoplanet WASP-39b with JWST NIRISS*, 2023, Nature, 614, 670–675
- The JWST Transiting Exoplanet Community Early Release Science Team, *Identification of carbon dioxide in an exoplanet atmosphere*, 2023, Nature, 614, 649–652
- Batalha, N. E., et al., *Importance of Sample Selection in Exoplanet Atmosphere Population Studies*, 2022, AJ, 165, 14