

Patrick Armstrong

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EDUCATION

Doctor of Philosophy (Astronomy & Astrophysics)

Australian National University
February 2020 – Present

Bachelor of Science (Adv.) (Hon.)

Australian National University
February 2016 – October 2019

ACADEMIC EXPERIENCE

DES Builder

Dark Energy Survey

Develop & maintain the Pippin pipeline, Internal review of DES papers, Organise & host meetings. July 2023 – Present

MSATT Student Mentor

MSATT

Provide guidance and mentorship for highschool students completing astronomical projects. February 2020 – Present

Astronomical Tutor

Australian National University

Sole tutor for Galaxies and Cosmology (ASTR3002). July 2019 – October 2022

OTHER EXPERIENCE

Student Seminar Planning Committee Member

Australian National University

[2022]: Senior planning committee member, [2021]: Planning committee member

Mt. Stromlo Outreach Officer

Australian National University

Deliver high quality outreach experience for school groups and families

Astronomical Consultant

[2020] Research for Questacon's Australia in Space exhibition

[2019] Research for Penguin Random House's Stargazer publication

[2018] Research and preparation for ABC's Stargazing Live 2018

[2018] Building backend code and moderation for the SkyMapper Citizen Science Project: Supernova Sighting

Questacon Staff

Questacon

[2019 – 2020] Learning Programs Presenter (APS 4)

[2016 – 2019] Questacon Assistant (APS 2)

[2015 – 2019] Gallery Assistant (APS 1)

RECOGNITION & DISTINCTIONS

ANU 2.3m Observing Time

Siding Spring Observatory

The Ultimate Low-z Supernova Sample for Cosmology

2023

Alex Rodgers Travelling Scholarship

ANU College of Science

Travel to DES Collaboration Meeting 2022

2022

Commendation for Excellence in Tutoring or Demonstrating

ANU College of Science

Tutoring Galaxies and Cosmology (ASTR3002)

2022

NCI ANU Merit Allocation Scheme

GADI

Forward Modelling Supernova Cosmology

2021 – 2022

Australian Government Research Training Program

Australian National University

PhD Scholarship

2020 – Present

RSAA Supplementary Scholarship

Australian National University

PhD Scholarship

2020 – Present

ANU Science, Health, and Medicine Honours Scholarship

Australian National University

Honours Scholarship

2019

ANU Summer Research Scholarship

Australian National University

Develop a TNS Bulk Report API for the SkyMapper Transient Survey

2016

Boyapti Computer Science and Mathematics prize for first year

Australian National University

Top grades in mathematics and computing

2016

Probing the consistency of cosmological contours for supernova cosmology (doi: [10.1017/pasa.2023.40](https://doi.org/10.1017/pasa.2023.40))

P. Armstrong, H. Qu, et. al. (2023); Publications of the Astronomical Society of Australia

SN2017jgh: a high-cadence complete shock cooling light curve of a SN IIb with the Kepler telescope (doi: [10.1093/mnras/stab2138](https://doi.org/10.1093/mnras/stab2138))

P. Armstrong, B E. Tucker, et. al. (2022); Monthly Notices of the Royal Astronomical Society

Binning is Sinning: Redemption for Hubble Diagram Using Photometrically Classified Type Ia Supernovae (doi: [10.3847/2041-8213/ace34d](https://doi.org/10.3847/2041-8213/ace34d))

R. Kessler, M. Vincenzi, ..., P. Armstrong, et. al. (2023); The Astrophysical Journal Letters

Revealing the Progenitor of SN 2021zby through Analysis of the TESS Shock-cooling Light Curve (doi: [10.3847/2041-8213/acb0d0](https://doi.org/10.3847/2041-8213/acb0d0))

Q. Wang, P. Armstrong, et. al. (2023); The Astrophysical Journal Letters

Concerning colour: The effect of environment on type Ia supernova colour in the dark energy survey (doi: [10.1093/mnras/stac3711](https://doi.org/10.1093/mnras/stac3711))

L. Kelsey, M. Sullivan, ..., P. Armstrong, et. al. (2023); Monthly Notices of the Royal Astronomical Society

The Dark Energy Survey supernova program: cosmological biases from supernova photometric classification (doi: [10.1093/mnras/stac1404](https://doi.org/10.1093/mnras/stac1404))

M. Vincenzi, M. Sullivan, ..., P. Armstrong, et. al. (2022); Monthly Notices of the Royal Astronomical Society

Measuring Cosmological Parameters with Type Ia Supernovae in redMaGiC Galaxies (doi: [10.3847/1538-4357/ac8b82](https://doi.org/10.3847/1538-4357/ac8b82))

R. Chen, D. Scolnic, ..., P. Armstrong, et. al. (2023); The Astrophysical Journal

The Pantheon+ Analysis: Cosmological Constraints (doi: [10.3847/1538-4357/ac8e04](https://doi.org/10.3847/1538-4357/ac8e04))

D. Brout, D. Scolnic, ..., P. Armstrong, et. al. (2023); The Astrophysical Journal

The dark energy survey 5-yr photometrically identified type Ia supernovae (doi: [10.1093/mnras/stac1691](https://doi.org/10.1093/mnras/stac1691))

A. Möller, M. Smith, ..., P. Armstrong, et. al. (2023); Monthly Notices of the Royal Astronomical Society

SN 2018agk: A Prototypical Type Ia Supernova with a Smooth Power-law Rise in Kepler (K2) (doi: [10.3847/1538-4357/ac2c84](https://doi.org/10.3847/1538-4357/ac2c84))

Q. Wang, A. Rest, ..., P. Armstrong, et. al. (2022); The Astrophysical Journal

Rates and delay times of Type Ia supernovae in the Dark Energy Survey (doi: [10.1093/mnras/stab1943](https://doi.org/10.1093/mnras/stab1943))

P. Wiseman, M. Sullivan, ..., P. Armstrong, et. al. (2023); Monthly Notices of the Royal Astronomical Society

First Results of the SkyMapper Transient Survey (doi: [10.1017/S1743921318002077](https://doi.org/10.1017/S1743921318002077))

A. Möller, B. E. Tucker, ..., P. Armstrong, et. al. (2022); IAU Symposium

Spectroscopic classification of SN 2018bwp as a type Ia supernova a few weeks after peak brightness (bibcode: [2018ATel11671....1L](https://ui.adsabs.org/2018ATel11671....1L))

A. Lopez-Sanchez, L. Galbany, ..., P. Armstrong, et. al. (2022); The Astronomer's Telegram

Spectroscopic classification of SN 2018bwq as a type Ia supernova a few days before maximum light. (bibcode: [2018ATel11667....1L](https://ui.adsabs.org/2018ATel11667....1L))

A. Lopez-Sanchez, L. Galbany, ..., P. Armstrong, et. al. (2022); The Astronomer's Telegram

First Confirmed Supernova with the SkyMapper/Zooniverse Supernova Sighting Project (bibcode: [2017ATel10426....1T](#))

B. E. Tucker, A. Moller, ..., P. Armstrong, et. al. (2022); The Astronomer's Telegram

WiFeS Classification of SMT17kdl/SN2017edm as a Type Ia Supernova (bibcode: [2017ATel10444....1T](#))

B. E. Tucker, A. Moller, ..., P. Armstrong, et. al. (2022); The Astronomer's Telegram

DEbass Transient Classification Report (16 Reports)

C. Lidman, H. J. Abbot, ..., P. Armstrong, et. al.; Transient Name Server Classification Report

Transient Classification Report for 2021-10-12 (bibcode: [2021TNSCR3493....1L](#))

C. Lidman, M. Dixon, ..., P. Armstrong, et. al. (2022); Transient Name Server Classification Report

Classification of 11 supernovae by DEBass (bibcode: [2021ATel14925....1L](#))

C. Lidman, S. Dhaka, ..., P. Armstrong, et. al. (2022); The Astronomer's Telegram

SkyMapper Transient Discovery Report (15 Reports)

A. Moller, B. Tucker, ..., P. Armstrong, et. al.; Transient Name Server Discovery Report

CONFERENCE TALKS

CosmoPalooza

DES SN 5 Year Methodology & Results

Invited Speaker

2023

DES Collaboration Meeting

DES 5 year supernova analysis

Invited Speaker

2020, 2021, 2022, 2023

ASA Annual Science Meeting

DES 5 year supernova analysis

Speaker

2020, 2021, 2022, 2023

Kepler K2 Extragalactic Data Analysis Meeting

Investigating transients in Kepler's K2 survey

Attendee

2018

COMMUNICATION

SN2017jgh: a high-cadence complete shock cooling light curve of a SN IIb with the Kepler telescope

Highlights:, *Al Jazeera, National Geographic Indonesia, Radio Canada, De Morgen, ABC Science online, The Guardian, Space Australia, Sky News Australia, 2GB and on the AAP wires*

Over 180 items in print, radio, and online, across Australia and internationally

2021