

# Patrick Armstrong

 [omegalambda.au](http://omegalambda.au) |  [patrick.armstrong@anu.edu.au](mailto:patrick.armstrong@anu.edu.au) |  [OmegaLambda1998](https://github.com/OmegaLambda1998) |  [0000-0003-1997-3649](https://orcid.org/0000-0003-1997-3649)

## EDUCATION

<b>Doctor of Philosophy (Astronomy &amp; Astrophysics)</b>	Australian National University <i>February 2020 – Present</i>
<b>Bachelor of Science (Adv.) (Hon.)</b>	Australian National University <i>February 2016 – October 2019</i>

## ACADEMIC EXPERIENCE

<b>DES Builder</b>	Dark Energy Survey <i>Develop &amp; maintain the Pippin pipeline, Internal review of DES papers, Organise &amp; host meetings. July 2023 – Present</i>
<b>MSATT Student Mentor</b>	MSATT <i>Provide guidance and mentorship for highschool students completing astronomical projects. February 2020 – Present</i>
<b>Astronomical Tutor</b>	Australian National University <i>Sole tutor for Galaxies and Cosmology (ASTR3002). July 2019 – October 2022</i>

## OTHER EXPERIENCE

<b>Student Seminar Planning Committee Member</b> <i>[2022]: Senior planning committee member, [2021]: Planning committee member</i>	Australian National University <i>February 2021 – October 2022</i>
<b>Mt. Stromlo Outreach Officer</b> <i>Deliver high quality outreach experience for school groups and families</i>	Australian National University <i>January 2018 – December 2022</i>
<b>Astronomical Consultant</b> <i>[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</i>	
<b>Questacon Staff</b> <i>[2019 – 2020] Learning Programs Presenter (APS 4) [2016 – 2019] Questacon Assistant (APS 2) [2015 – 2019] Gallery Assistant (APS 1)</i>	Questacon

## RECOGNITION & DISTINCTIONS

<b>ANU 2.3m Observing Time</b> <i>The Ultimate Low-z Supernova Sample for Cosmology</i>	Siding Spring Observatory <i>2023</i>
<b>Alex Rodgers Travelling Scholarship</b> <i>Travel to DES Collaboration Meeting 2022</i>	ANU College of Science <i>2022</i>
<b>Commendation for Excellence in Tutoring or Demonstrating</b> <i>Tutoring Galaxies and Cosmology (ASTR3002)</i>	ANU College of Science <i>2022</i>
<b>NCI ANU Merit Allocation Scheme</b> <i>Forward Modelling Supernova Cosmology</i>	GADI <i>2021 – 2022</i>
<b>Australian Government Research Training Program</b> <i>PhD Scholarship</i>	Australian National University <i>2020 – Present</i>
<b>RSAA Supplementary Scholarship</b> <i>PhD Scholarship</i>	Australian National University <i>2020 – Present</i>
<b>ANU Science, Health, and Medicine Honours Scholarship</b> <i>Honours Scholarship</i>	Australian National University <i>2019</i>
<b>ANU Summer Research Scholarship</b> <i>Develop a TNS Bulk Report API for the SkyMapper Transient Survey</i>	Australian National University <i>2016</i>
<b>Boyapti Computer Science and Mathematics prize for first year</b> <i>Top grades in mathematics and computing</i>	Australian National University <i>2016</i>

---

**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

**Revealing the progenitor of SN 2021zby through analysis of the *TESS* shock-cooling light curve** (doi: [10.48550/arXiv.2211.03811](https://doi.org/10.48550/arXiv.2211.03811))

Q. Wang, P. Armstrong, et. al. (2023); arXiv e-prints

**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](#))

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