# Qinan Wang

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## Education

- **Johns Hopkins University** — Baltimore, MD
  *PhD in Physics and Astronomy* — *Sep 2017 - Aug 2023*
- **University of Hong Kong** — HKSAR, China
  *BSc in Mathematics/Physics (First Honor)* — *Sep 2012 - June 2016*

## Skills Summary

- **Program Languages:** Python, SQL
- **Data Reduction:** *TESS*, HST STIS/COS, APO 3.5m DIS/KOSMOS/ARCTIC, ATLAS

## Experience

- **Massachusetts Institute of Technology / Weizmann Institute of Science** — Cambridge, MD
  *TESS-ULTRASAT joint postdoc fellow* — *Sep 2024 -*
- **Johns Hopkins University** — Baltimore, MD
  *Postdoc Research Fellow - Dr. Armin Rest* — *Sep 2023 - Sep 2024*
  - Development of `SynDiff` for optimal *TESS* data reduction.
  - Re-training SALT3 model in UV with HST STIS spectra.
- **University of Hong Kong** — HKSAR, China
  *Research Assistant - Prof. Meng Su* — *Aug 2016 - June 2017*
  - Influence of instrumental contamination in CMB lensing reconstruction.
- **University of California, Berkeley** — Berkeley, CA
  *Research Assistant - Dr John Tomsick* — *June 2015 - Aug 2015*
  - Identification of X-ray counterparts of *INTEGRAL* sources in *Chandra*

## Honors and Awards

- Rosita King Ho Scholarships, 2015
- Li Po Kwai Scholarships, 2014
- Alan John Ellis Prizes in Mathematics, 2013

## Grant & Telescope time and observation experience

### Accepted programs as Principle Investigator:

- *Neil Gehrels Swift Observatory*, ToO program in Cycle 20, 50 triggers (75ks), $40,000. — 2024
- >20 half-nights with the 3.5m ARC telescope at Apache Point Observatory, including 11 triggered ToO. — 2019 - Now

### Accepted programs and Observation experience as Co-Is:

- Blanco 4-meter Telescope at CTIO, 5 nights. — 2022 - Now
- *Hubble Space Telescope*, 7 proposals. — 2019 - Now
- *James Webb Space Telescope*, 9 proposals. — 2022 - Now

## Mentoring and Teaching Experience

- Sofia Rest, JHU undergraduate student, — 2021 - now
- Kyle Dalrymple, JHU undergraduate student, — 2022 - now
- Sophie von Coelln, high school/undergraduate student, — 2022 - now

## Invited Talks

- Transients From Space, Space Telescope Science Institute — Mar 2025
- Monday Afternoon Talk, MIT — April 2024
- Talk at the TESS Mission Update Meeting, MIT — June 2023
- Remote talk, Tsinghua University — May 2023
- TESS Science Talk, MIT — Feb 2023

## Contributed Talks and Presentations

- The Progenitors of Supernovae and their Explosions conference, Dali, China — Aug 2024
- The TESS Science Conference III, MIT — July 2024
- Transients Down Under conference, Swinburne University of Technology — Jan 2024
- Talk at CIERA Observers Group Meetings, Northwestern University — Nov 2023
- Contributed seminar, Carnegie Mellon University — Nov 2023
- SuperNova EXplosions (SNEX) Conference, Technion — Aug 2023
- Talk at POISE meeting, Space Telescope Science Institute — Aug 2023
- HotSci Talk series, Space Telescope Science Institute — Aug 2023
- The Transient and Variable Universe conference, UIUC — June 2023
- Poster presentation at AAS 241th, Seattle — Jan 2023
- Boom! A Workshop on Explosive Transients with LSST, UIUC — July 2022
- Contributed seminar, University of Melbourne — June 2022
- Poster presentation at SuperVirtual, online — Nov 2021
- Astrocoffee, JHU — Oct 2021
- CAS Wine and Cheese Seminars, JHU — Oct 2020

## open-source softwares

- *TESS* EXtragalactic Alert System (TEXAS). Github
- TESSreduce. Github
- YSE-PZ. Github
- ATClean. Github

## Professional Services

- Organizer of the Extragalactic Transient parallel session at the *TESS* Science Conference III, 2024
- Peer-reviewer for ApJL, 2023-present
- Panelist for NASA funding programs, 2022

## Publications

**First-author publications:**

1. **Qinan Wang**, Anika Goel, Luc Dessart et al., MNRAS 530, no.2 (2024): 3906-3923, [arXiv:2305.05015]:

   A Low-Mass Helium Star Progenitor Model for the Type Ibn SN 2020nxt

2. **Qinan Wang**, Armin Rest, Georgios Dimitriadis et al., ApJ 962, no. 2 (2024): 17, [arXiv:2305.03779]:

   Flight of the Bumblebee: the Early Excess Flux of Type Ia Supernova 2023bee revealed by $TESS$, $Swift$ and Young Supernova Experiment Observations

3. **Qinan Wang**, Patrick Armstrong, Yossef Zenati et al., ApJL 943, no. 2 (2023): L15 [arXiv:2211.03811]:

   Revealing the Progenitor of SN 2021zby through Analysis of the *TESS* Shock-cooling Light Curve

4. **Qinan Wang**, Armin Rest, Yossef Zenati et al., ApJ 923, no. 2 (2021): 167 [arXiv:2108.13607]:

   SN 2018agk: A Prototypical Type Ia Supernova with a Smooth Power-law Rise in Kepler (K2)

**Co-author publications:**

1. Sebastian Gomez, Matt Nicholl, Edo Berger, Peter K. Blanchard, V. Ashley Villar, Sofia Rest, Griffin Hosseinzadeh **et al**. submitted to ApJ, [arXiv:2407.07946]:

   The Type I Superluminous Supernova Catalog I: Light Curve Properties, Models, and Catalog Description

2. J. D. R. Pierel, M. Engesser, D. A. Coulter, C. Decoursey, M. R. Siebert, A. Rest, E. Egami **et al**. submitted to ApJ, [arXiv:2406.05089]:

   Discovery of An Apparent Red, High-Velocity Type Ia Supernova at z= 2.9 with JWST

3. M. R. Siebert, C. Decoursey, D. A. Coulter, M. Engesser, J. D. R. Pierel, A. Rest, E. Egami et al. **et al**. submitted to ApJ, [arXiv:2406.05076]:

   Discovery of a Relativistic Stripped Envelope Type Ic-BL Supernova at z= 2.83 with JWST

4. Christa DeCoursey, Eiichi Egami, Justin DR Pierel, Fengwu Sun, Armin Rest, David A. Coulter, Michael Engesser **et al**. submitted to ApJ, [arXiv:2406.05060]:

   The JADES Transient Survey: Discovery and Classification of Supernovae in the JADES Deep Field

5. S. Rest, A. Rest, C. D. Kilpatrick, J. E. Jencson, S. von Coelln, L. Strolger, S. Smartt **et al**. submitted to ApJ, [arXiv:2405.03747]:

   ATClean: A Novel Method for Detecting Low-Luminosity Transients and Application to Pre-explosion Counterparts from SN 2023ixf

6. J. D. R. Pierel, A. B. Newman, S. Dhawan, M. Gu, B. A. Joshi, T. Li, S. Schuldt, **et al**. ApJL 967, no. 2 (2024): L37, [arXiv:2404.02139]:

   Lensed Type Ia Supernova "Encore" at z= 2: The First Instance of Two Multiply-Imaged Supernovae in the Same Host Galaxy

7. Szanna Zsíros, Tamás Szalai, Ilse De Looze, Arkaprabha Sarangi, Melissa Shahbandeh, Ori D. Fox, Tea Temim **et al**. MNRAS 529, no. 1 (2024): 155-168, [arXiv:2310.03448]:

   Serendipitous detection of the dusty Type IIL SN 1980K with JWST/MIRI

8. S. Tinyanont, R. J. Foley, K. Taggart, K. W. Davis, N. LeBaron, J. E. Andrews, M. J. Bustamante-Rosell **et al**. PASP 136, no. 1 (2024): 014201, [arXiv:2309.07102]:

   Keck Infrared Transient Survey I: Survey Description and Data Release 1

9. K. W. Davis, K. Taggart, S. Tinyanont, R. J. Foley, V. A. Villar, L. Izzo, C. R. Angus **et al**. MNRAS 523, no. 2 (2023): 2530-2550, [arXiv:2211.05134]:

   SN 2022ann: a Type Icn supernova from a dwarf galaxy that reveals helium in its circumstellar environment

10. Melissa Shahbandeh, Arkaprabha Sarangi, Tea Temim, Tamas Szalai, Ori D. Fox, Samaporn Tinyanont, Eli Dwek **et al**. MNRAS 523, no. 4 (2023): 6048-6060, [arXiv:2301.10778]:

    JWST observations of dust reservoirs in type IIP supernovae 2004et and 2017eaw

11. Hugh Roxburgh, Ryan Ridden-Harper, Zachary G. Lane, Armin Rest, Lancia Hubley, Rebekah Hounsell, **Qinan Wang** et al., ApJ 963, no. 2 (2024): 89 [arXiv:2307.11294]:

    A Comprehensive Investigation of Gamma-Ray Burst Afterglows Detected by *TESS*

12. D. A. Coulter, D. O. Jones, P. McGill, R. J. Foley, P. D. Aleo, M. J. Bustamante-Rosell, D. Chatterjee **et al**. PASP 135, no. 1048 (2023): 064501 [arXiv:2303.02154]:

    YSE-PZ: A Transient Survey Management Platform that Empowers the Human-in-the-loop

13. Jacob E. Jencson, Jeniveve Pearson, Emma R. Beasor, Ryan M. Lau, Jennifer E. Andrews, K. Azalee Bostroem, Yize Dong **et al**. ApJL 952, no. 2 (2023): L30 [arXiv:2306.08678]:

    A Luminous Red Supergiant and Dusty Long-period Variable Progenitor for SN 2023ixf

14. W. V. Jacobson-Galan, L. Dessart, R. Margutti, R. Chornock, R. J. Foley, C. D. Kilpatrick, D. O. Jones **et al**. accepted by ApJL, [arXiv:2306.04721]:

    SN 2023ixf in Messier 101: Photo-ionization of Dense, Close-in Circumstellar Material in a Nearby Type II Supernova

15. P. D. Aleo, K. Malanchev, S. Sharief, D. O. Jones, G. Narayan, R. J. Foley, V. A. Villar **et al**. ApJS 266, no. 1 (2023): 9 [arXiv:2211.07128]:

    The Young Supernova Experiment Data Release 1 (YSE DR1): Light Curves and Photometric Classification of 1975 Supernovae

16. M. D. Fulton, S. J. Smartt, L. Rhodes, M. E. Huber, V. A. Villar, T. Moore, S. Srivastav **et al**. ApJL 946, no. 1 (2023): L22 [arXiv:2301.11170]:

    The optical light curve of GRB 221009A: the afterglow and the emerging supernova

17. Andreoni, Igor, Michael W. Coughlin, Daniel A. Perley, Yuhan Yao, Wenbin Lu, S. Bradley Cenko, Harsh Kumar **et al**. Nature 612, no. 7940 (2022): 430-434. [arXiv:2211.16530]:

    A very luminous jet from the disruption of a star by a massive black hole

18. J. D. R. Pierel, D. O. Jones, W. D. Kenworthy, M. Dai, R. Kessler, C. Ashall, A. Do **et al**. ApJ 939, no. 1 (2022): 11 [arXiv:2209.05594]:

    SALT3-NIR: Taking the Open-source Type Ia Supernova Model to Longer Wavelengths for Next-generation Cosmological Measurements

19. Yossef Zenati, **Qinan Wang**, Alexey Bobrick et al. Submitted to ApJ [arXiv:2207.07146]:

    Evidence for Extended Hydrogen-Poor CSM in the Three-Peaked Light Curve of Stripped Envelope Ib Supernova

20. W. V. Jacobson-Galán, Padma Venkatraman, Raffaella Margutti, David Khatami, Giacomo Terreran, Ryan J. Foley, Rodrigo Angulo **et al**. ApJ 932, no. 1 (2022): 58 [arXiv:2203.03785]:

    The Circumstellar Environments of Double-peaked, Calcium-strong Transients 2021gno and 2021inl

21. Samaporn Tinyanont, Ryan Ridden-Harper, R. J. Foley, Viktoriya Morozova, C. D. Kilpatrick, Georgios Dimitriadis, Lindsay DeMarchi **et al**. MNRAS 512, no. 2 (2022): 2777-2797 [arXiv:2110.10742 ]:

    Progenitor and close-in circumstellar medium of type II supernova 2020fqv from high-cadence photometry and ultra-rapid UV spectroscopy

22. Ori D. Fox, Schuyler D. Van Dyk, Benjamin F. Williams, Maria Drout, Emmanouil Zapartas, Nathan Smith, Dan Milisavljevic **et al**. ApJL 929, no. 1 (2022):L15 [arXiv:2203.01357]:

    The Candidate Progenitor Companion Star of the Type Ib/c SN 2013ge

23. W. V. Jacobson-Galán, Luc Dessart, D. O. Jones, Raffaella Margutti, D. L. Coppejans, Georgios Dimitriadis, Ryan J. Foley **et al**. ApJ 924, no. 1 (2022):15 [arXiv:2109.12136]:

    Final Moments. I. Precursor Emission, Envelope Inflation, and Enhanced Mass Loss Preceding the Luminous Type II Supernova 2020tlf

24. Ryan Ridden-Harper, Armin Rest, Rebekah Hounsell, Tomás E Müller-Bravo, **Qinan Wang**, Villar, V. A.. arXiv preprint [arXiv:2111.15006]:

    `TESSreduce`: transient focused *TESS* data reduction pipeline

25. D. O. Jones, R. J. Foley, G. Narayan, Jens Hjorth, M. E. Huber, P. D. Aleo, K. D. Alexander **et al**. ApJ 908(2), 143 (2021) [arXiv:2010.09724]:

The Young Supernova Experiment: survey goals, overview, and operations

26. Jeffrey Iuliano, Joseph Eimer, Lucas Parker, Gary Rhoades, Aamir Ali, John W. Appel, Charles Bennett **et al**. Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy IX, vol. 10708, pp. 259-277. SPIE, 2018. [arXiv:1807.04167]:

The cosmology large angular scale surveyor receiver design.

27. Kathleen Harrington, Joseph Eimer, David T. Chuss, Matthew Petroff, Joseph Cleary, Martin DeGeorge, Theodore W. Grunberg **et al**. Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy IX, vol. 10708, pp. 369-390. SPIE, 2018. [arXiv:1807.03807]:

Variable-delay polarization modulators for the CLASS telescopes.

28. Sumit Dahal, Aamir Ali, John W. Appel, Thomas Essinger-Hileman, Charles Bennett, Michael Brewer, Ricardo Bustos **et al**. Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy IX, vol. 10708, pp. 230-245. SPIE, 2018. [arXiv:1807.03927]:

Design and characterization of the cosmology large angular scale surveyor (CLASS) 93 GHz focal plane.

29. H. F. Chau, Cardythy Wong, **Qinan Wang**, Tieqiao Huang. arXiv preprint [arXiv:1608.08329]:

Qudit-Based Measurement-Device-Independent Quantum Key Distribution Using Linear Optics

30. H. F. Chau, **Qinan Wang**, Cardythy Wong. PRA 95, no. 2 (2017): 022311. [arXiv:1603.02370]:

Experimentally feasible quantum-key-distribution scheme using qubit-like qudits and its comparison with existing qubit-and qudit-based protocols

31. John A. Tomsick, Roman Krivonos, **Qinan Wang** et al., ApJ 816, no. 1 (2015): 38 [arXiv:1512.00044]:

*Chandra* observations of eight sources discovered by *INTEGRAL*