Zhuo Chen

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CITIZENSHIP China

EDUCATION

University of Rochester, Rochester, New York, USA

- Ph.D. in Astronomy — Jan 2014 – Aug 2018
  - Thesis: Evolution of low-mass symbiotic binaries
  - Advisor: Prof. Adam Frank & Prof. Eric G. Blackman
  - Focus: Radiation transfer, hydrodynamics, equation of state
- M.A. in Physics — Jan 2014 – Mar 2016
- M.Sc. in Mechanical Engineering — Aug 2012 – Mar 2014
  - Focus: GPU Poisson solver (using C++)

Tongji University, Shanghai, China

- B.Sc. in Engineering Mechanics — Sep 2007 – Jul 2012

ACADEMIC INTERESTS Radiation-hydrodynamics, equation of state, magnetohydrodynamics, stellar evolution, high performance computing

EMPLOYMENT CITA National Postdoctoral Fellow at the University of Alberta — Sep 2018 – Sep 2020

AWARDS & SCHOLARSHIPS

- Horton Fellowship, University of Rochester — 2014 – 2018
- Travel grant, IAUS323 “Planetary Nebulae” — Oct 2016
- Best student presentation award, IAUS323 “Planetary Nebulae” — Oct 2016
- Tsung-Dao Lee Visiting Scholarship — Dec 2019

PROFESSIONAL SERVICE

- Reviewer of *Astronomy & Astrophysics* — 2017 – Present

TEACHING EXPERIENCE

- TA in electromagnetic theory, University of Rochester — 2014
- TA in statistical mechanics, University of Rochester — 2015

CO-PI

- Hubble Space Telescope Cycle 25
  Unveiling hidden companions in post-AGB stars: 3D simulations of evolved star binaries — 2017 – 2020

TALKS

- Columbia University, USA — Sep 2017
- Max Planck Institute for Astrophysics, Germany — Jan 2018
- Canadian Institute for Theoretical Astrophysics, Canada — Apr 2019
- Tsinghua University, China — Jun 2019
- Kavli Institute for Astronomy and Astrophysics, China — Jun 2019

PRESENTATIONS IN CONFERENCES

- Poster presentation, “Mass transfer and disc formation in AGB binary systems”, Peking University, China — Oct 2016
- Oral presentation “Wind-accelerated orbital evolution in binary systems with giant stars”, HongKong, China — Dec 2017
- Oral presentation “On the variability and dust-driven winds of AGB stars”, Center for Computational Astrophysics, USA — May 2019

SKILLS

- Fortran, C, C++, MPI 3.0, OpenMP, Python, Visit, HDF5

PUBLICATIONS

JOURNALS (FIRST AND SECOND AUTHOR)

[1] Zhuo Chen, Adam Frank, Eric G. Blackman, and Jason Nordhaus, "The creation of AGB fallback shells", *MNRAS*, vol. 457, issue. 3, pp. 3219–3224, Apr 2016.

[2] Zhuo Chen, Jason Nordhaus, Adam Frank, Eric G. Blackman, and Bruce Balick, "Three-dimensional hydrodynamic simulations of L2 Puppis", *MNRAS*, vol. 460, issue. 4, pp. 4182–4187, Aug 2016.

[3] *Zhuo Chen, Adam Frank, Eric G. Blackman, Jason Nordhaus, and Jonathan Carroll-Nellenback, "Mass transfer and disc formation in AGB binary systems", *MNRAS*, vol. 468, issue. 4, pp. 4465–4477, Jul 2017.

[4] Zhuo Chen, Eric G. Blackman, Jason Nordhaus, Adam Frank, and Jonathan Carroll-Nellenback, "Wind-accelerated orbital evolution in binary systems with giant stars", *MNRAS*, vol. 473, issue 1, pp. 747–756, Jan 2018.

[5] Adam Frank, Zhuo Chen, Thomas Reichardt, Orsola De Marco; Eric G. Blackman, Jason Nordhaus, "Planetary Nebulae Shaped by Common Envelope Evolution", *Galaxies*, vol. 6, issue 4, pp. 113, Oct 2018.

[6] *Zhuo Chen, Matthew S.B. Coleman, Eric G. Blackman, and Adam Frank, "Solving the Riemann problem for realistic astrophysical fluids", *Journal of Computational Physics*, vol. 388, pp. 490–517, Jul 2019.

[7] *Zhuo Chen, Natalia Ivanova, and Jonathan Carroll-Nellenback, "A 3D radiation-hydrodynamic AGB binary model", *The Astrophysical Journal*, vol. 892 pp. 110 Apr 2020.

JOURNALS (CONTRIBUTE AUTHOR)

[1] "Accretion in common envelope evolution", *MNRAS*, vol. 480, issue. 2, pp. 1898–1911, Oct 2018.

[2] "Hydrodynamic simulations of disrupted planetary accretion discs inside the core of an AGB star", *MNRAS*, accepted, Sep 2018.

CONFERENCES

[1] Zhuo Chen, Adam Frank, Eric G. Blackman, Jason Nordhaus and Jonathan Carroll-Nellenback, "Mass transfer in asymptotic-giant-branch binary systems," in *Proceedings of the International Astronomical Union*, Beijing, China, Oct 2016.

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