

# Zhuo Chen

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## RESEARCH INTERESTS

Galactic Center, supermassive black hole, star formation, stellar photometry & spectroscopy, star clusters, timing variability, compact objects, infrared observing

## EDUCATION

**University of California, Los Angeles**, Los Angeles, CA USA  
*Ph.D.* Astronomy and Astrophysics, 2022 anticipated  
Chair: Prof. Andrea Ghez  
09/03/2020 Advanced to candidacy

**University of California, Los Angeles**, Los Angeles, CA USA  
*M.S.* Astronomy, 05/08/2018

**Nanjing University**, Nanjing, Jiangsu China  
*B.A.* Astronomy and Space Science, 2016

## RESEARCH EXPERIENCE

**University of California, Los Angeles**, Los Angeles, CA USA  
*Graduate Student Researcher* **Fall 2016 - Present**

Advisors: Prof. Andrea Ghez and Prof. Tuan Do

- Modeling the star formation history of the Milky Way nuclear star cluster for the first time with metallicity constraints from recently obtained metallicity measurements from Keck, Gemini and VLT
- Predicting compact object remnants (SBH & NS) and their rate of mergers at the Galactic Center for gravitational-wave detections
- Monitoring the long-term variability of the Milky Way supermassive black hole at the Galactic Center with speckle data obtained from Keck

**National Astronomical Observatories, Chinese Academy of Sciences (NAOC)**,  
Beijing, China

*Summer Undergraduate Research Fellow at NAOC* **Summer 2014**

Advisor: Prof. Di Li

- Analyzed dust emission from dense molecular cores to probe star formation

**Shanghai Astronomical Observatory, Chinese Academy of Sciences (SHAO)**,  
Shanghai, China

*Undergraduate Thesis at SHAO* **Spring & Summer 2016**

Advisor: Prof. Lei Hao

- Interpreted the star formation-extinction relation with nearby galaxies from the MaNGA survey

**Nanjing University**, Nanjing, Jiangsu China

*National Scholar*

**Fall 2013 - Winter 2016**

Advisor: Prof. Xiangdong Li

- Probed the influence of the debris disks to the stellar evolution of pulsars by determining actual stellar age and the braking index

**FIRST AUTHOR  
PUBLICATIONS**

- **Chen Z.**, Gallego-Cano E., Do T., Witzel G., Ghez A., Schödel R., Sitarski B. N., Becklin E. E., Lu J. R., Morris M. R., Dehghanfar A., Gautam A. K., Hees A., Hosek M. Jr., Jia S., Mangian A. C., Matthews K. *“Consistency of the Infrared Variability of SGR A\* over 22 yr”*, 2019, ApJ, 882, 28

**CONTRIBUTED  
PUBLICATIONS**

- Bentley R. O., Do T., Kerzendorf W. E., Chu, D. S., **Chen Z.**, Konopacky Q., Ghez A. *“Measuring the  $\alpha$ -abundance of subsolar-metallicity stars in the Milky Way’s central half-parsec: testing globular cluster and dwarf galaxy infall scenarios”*, accepted by ApJ
- Do T., Witzel G., Gautam A. K., **Chen Z.**, Ghez A., Morris M. R., Becklin E. E., Ciurlo A., Hosek M. Jr., Martinez G., Matthews K., Sakai S., Schödel R. *“Unprecedented Near-infrared Brightness and Variability of Sgr A\*”*, 2019, ApJ, 882, 27
- Do T., Hees A., Ghez A., Martinez G., Chu, D. S., Jia S., Sakai S., Lu J. R., Gautam A. K., Kosmo O’Niel K., Becklin E. E., Morris M. R., Matthews K., Nishiyama S., Campbell R., Chappell S., **Chen Z.**, Ciurlo A., Dehghanfar A., Gallego-Cano E., Kerzendorf W., Lyke J., Naoz S., Saida H., Schödel R., Takahashi M., Takamori Y., Witzel G., Wizinowich P. *“Relativistic redshift of the star S0-2 orbiting the Galactic center supermassive black hole”*, 2019, Science, 365, 6454
- Do T., Ghez A., Lu J. R., Morris M. R., Hosek M. Jr., Hees A., Naoz S., Ciurlo A., Armitage P., Beaton R. L., Becklin E. E., Bellini A., Bentley R. O., Chakrabarti S., **Chen Z.**, Chu, D. S., Dehghanfar A., Gammie C., Gautam A. K., Genzel R., Greene J., Hora J., Kerzendorf W. E., Libralato M., Nishiyama S., Kosmo O’Niel K., Ozel F., Perets H., Psaltis D., Quataert E., Ramirez-Ruiz E., Rich R. M., Rasio F., Sakai S., Smith H., Weinberg N. N., Witzel G. *“Envisioning the next decade of Galactic Center science: a laboratory for the study of the physics and astrophysics of supermassive black holes”*, 2019, Astro2020: Decadal Survey on Astronomy and Astrophysics, science white papers, no. 530

**SUCCESSFUL  
PROPOSALS,  
PRESS &  
FELLOWSHIP**

- **2017A - 2021B:** Keck Observatory proposals (**Approved**), UCLA Galactic Center Group, co-investigator
- **Cycle 1:** James Webb Space Telescope (JWST) proposal (**Approved**), co-investigator
- **Cycle 29:** Hubble Space Telescope (HST) proposal (**Approved**), co-investigator
- **2020A:** Gemini Observatory proposal (**Approved**), co-investigator
- **2022 AAS Press Conference Presenter and Briefing**
- **2016:** UCLA Astronomy Scholar Fellowship

**SELECTED  
CONFERENCE  
TALKS AND  
POSTERS**

- Talk: A New Window on Star Formation History and Compact Object Remnants at the Galactic Center
  - CfA, Harvard & Smithsonian, November 2021
  - UC Berkeley, November 2021
  - Ohio State University, November 2021
  - University of Washington, November 2021
  - UC Santa Cruz, November 2021
  - Caltech & IPAC, October 2021
  - Princeton University, September 2021

- Talk: **Keck Science Meeting**, virtual, 9/2021, A New Window on Star Formation History at the Galactic Center
- Talk: **Thirty Meter Telescope Science Forum**, Xiamen, China, 11/2019, Sgr A\* Long-term Variability and Recent Flares
- Poster: **Galactic Center Workshop**, Yokohama, Japan, 10/2019, Consistency of the Infrared Variability of SGR A\* over 22yr
- Talk: **Keck Science Meeting**, Los Angeles, CA, 9/2019, Consistency of the Infrared Variability of SGR A\* over 22yr
- Talk: **UCLA Galactic Center Group Workshop**, Los Angeles, CA, 12/2018, Extending the Past Time Baseline for Variability Measurements of the Supermassive Black Hole at the Galactic Center
- Poster: **Keck Science Meeting**, Pasadena, CA, 8/2018, Extending the Past Time Baseline for Variability Measurements of the Supermassive Black Hole at the Galactic Center
- Poster: **American Astronomical Society 231st Meeting**, Washington, DC, 1/2018, Monitoring the Variability of the Supermassive Black Hole at the Galactic Center
- Talk: **Preparing Thirty Meter Telescope(TMT) Future Science and Technology Leaders Workshop**, Santa Cruz, CA, 8/2017

**PUBLIC  
OUTREACH**

**Astronomy Live!**, Los Angeles, CA  
 Coordinator Leader **Summer 2017 - 2020**  
 • Coordinator of the Astronomy Outreach program at UCLA. Organized, coordinated and volunteered outreach events throughout the Los Angeles community.

**Explore Your Universe**, Los Angeles, CA  
 Coordinator and Volunteer **Fall 2016 - Present**  
 • Organized one of the UCLA's largest science outreach events every year

**Preparing Thirty Meter Telescope(TMT) Future Science and Technology Leaders Workshop**, Santa Cruz, CA  
 Attendee **Summer 2017**  
 • Led the seminar section of outreach organization management

**TEACHING**

**Teaching Assistant**, University of California, Los Angeles **2016 - 2021**  
 • Astronomy 3, *Nature of Universe*  
 • Astronomy 5, *Life in Universe*  
 • Astronomy 81, *Stars and Nebulae*