

# Linhao Ma

1200 E. California Blvd., MC 350-17, Pasadena, CA 91125, USA  
[lma3@caltech.edu](mailto:lma3@caltech.edu) |  | <http://lma.caltech.edu/> | +1 (626) 395-4847

## EDUCATION

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<b>California Institute of Technology</b> Ph.D. in Physics (advisor: Prof. Jim Fuller)	Pasadena, CA, USA 2019 – 2024 (expected)
<b>University of Science and Technology of China</b> B.S. in Physics	Hefei, China 2015 – 2019

## RESEARCH EXPERIENCE

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Kavli Summer Program in Astrophysics Fellow, Max Planck Institute for Astrophysics	2023
Graduate Research Assistant, California Institute of Technology	2019 – present
Visiting Undergraduate Research Assistant, Heidelberg University	2019
Visiting Undergraduate Research Assistant, California Institute of Technology	2018

## SELECTED TALKS & PRESENTATIONS

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TAC Seminar, UC Berkeley, Berkeley, CA, USA	Nov 2023
RandoAstro Seminar, CITA, Toronto, Canada	Nov 2023
THEA Seminar, Columbia University, New York, NY, USA	Nov 2023
CCA Stellar Meeting Seminar, Flatiron Institute, New York, NY, USA	Nov 2023
Astro Coffee Talk, Institute for Advanced Study, Princeton, NJ, USA	Nov 2023
CIERA Theory Seminar, Northwestern University, Evanston, IL, USA	Nov 2023
Stellar Meeting Seminar, Geneva Observatory, Versoix, Switzerland	Aug 2023
3,2,1: Massive Triples, Binaries and Mergers 2023, Leuven, Belgium	July 2023
TERRA Workshop (invited), Lorentz Center, Leiden, the Netherlands	Jan 2023
AAS Exoplanets IV, Las Vegas, NV, USA	May 2022
SURF Seminar, Caltech, Pasadena, CA, USA	Sept 2018

## AWARDS & HONORS

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Kavli Summer Program in Astrophysics Fellowship	2023
David and Barbara Groce Travel Fund, Caltech	2022, 2023
Robert A. Millikan Graduate Fellowship, Caltech	2019
1st Place (Tier 2) in “Lab Physics IV” Course Project Competition, USTC	2017
1st Place in “Electromagnetism A” Course Project Competition, USTC	2016
Outstanding Student Scholarship, USTC	2015, 2016, 2017

## TEACHING ASSISTANTSHIPS

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**Caltech:** Ph2A: Vibrations and Waves; Ph2C: Statistical Physics; Ph12B: Introduction to Quantum Mechanics; Ph12C: Statistical Mechanics; Ph236B: General Relativity  
**USTC:** 022148: Quantum Mechanics A

## SERVICES & OUTREACH

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<b>Undergraduate Research Mentor</b> , Caltech SURF Program	2023
<b>Invited Speaker</b> , Astronomy on Tap in Mandarin (online)	Feb 2022
<b>Referee</b> , MNRAS and ApJ	2021 – present

## ADDITIONAL SKILLS

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**Programming:** Python, Fortran, MATLAB, C, Wolfram Language  
**Simulations:** MESA, GIZMO, GYRE  
**Typesetting:** L<sup>A</sup>T<sub>E</sub>X, HTML  
**Languages:** Chinese (native), English (advanced), German (intermediate), Italian (beginner)

## REFERENCES

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**Prof. Jim Fuller**

Professor of Theoretical Astrophysics, California Institute of Technology

**Prof. Philip F. Hopkins**

Ira S. Bowen Professor of Theoretical Astrophysics, California Institute of Technology

**Prof. Selma E. de Mink**

Scientific Director, Max Planck Institute for Astrophysics

**Dr. Earl Patrick Bellinger**

Postdoctoral Research Fellow, Max Planck Institute for Astrophysics  
Assistant Professor of Astronomy, Yale University (starting Jan 2024)

**Dr. Cole Johnston**

Postdoctoral Researcher, Radboud University  
Visiting Professor, Katholieke Universiteit Leuven

## PUBLICATIONS

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Summary: 7 refereed/submitted papers (6 as first-author), 1 paper in preparation; 298 total citations (100 as first-author); [NASA/ADS Library](#)

- [1] **Ma, L.**, and Fuller, J., “Tidal Spin-up of Subdwarf B Stars”, in prep.
- [2] **Ma, L.**, Johnston, C., Bellinger E. P., and de Mink, S. E., “Variability of Blue Supergiants in the LMC with TESS”, submitted to *ApJ*, arXiv: [2310.19546](#)
- [3] **Ma, L.**, and Fuller, J., 2023, “Tidal Spin-up of Black Hole Progenitor Stars”, *ApJ*, **952**, 53
- [4] **Ma, L.**, Hopkins, P. F., Kelly, L. Z., and Faucher-Giguère, C., 2023, “A new discrete dynamical friction estimator based on  $N$ -body simulations”, *MNRAS*, **519**, 5543
- [5] **Ma, L.**, Hopkins, P. F., Ma, X., Anglés-Alcázar, D., Faucher-Giguère, C., and Kelly, L. Z., 2021, “Seeds don’t sink: even massive black hole ‘seeds’ cannot migrate to galaxy centers efficiently”, *MNRAS*, **508**, 1973
- [6] **Ma, L.**, and Fuller, J., 2021, “Orbital Decay of Short-period Exoplanets via Tidal Resonance Locking”, *ApJ*, **918**, 16
- [7] **Ma, L.**, and Fuller, J., 2019, “Angular momentum transport in massive stars and natal neutron star rotation rates”, *MNRAS*, **488**, 4338
- [8] Fuller, J., and **Ma, L.**, 2019, “Most Black Holes Are Born Very Slowly Rotating”, *ApJL*, **881**, L1