Yukun Huang 黄宇坤

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EDUCATION

Ph.D. in Astronomy, University of British Columbia (UBC), Canada 2019 – 2023
M.S. in Aerospace Science, Tsinghua University, China 2016 – 2019

RESEARCH POSITIONS

Project Research Fellow, National Astronomical Observatory of Japan, Japan
Collaborator: Prof. Eiichiro Kokubo **Apr. 2024 – Now**

Visiting Scholar, Tsinghua University, China
Collaborators: Prof. Wei Zhu & Prof. Chris Ormel Jan. 2024 – Mar. 2024

Graduate Research Associate, UBC, Canada | *Advisor: Prof. Brett Gladman* 2019 – 2023

Research Associate, Tsinghua University, China | *Advisor: Prof. Junfeng Li* 2015 - 2019

GRANTS & FELLOWSHIPS

JSPS Grant-in-Aid (KAKENHI) for Early-Career Scientists 2025 – Now
NAOJ Project Research Fellow 2024 – Now
Edwin S.H. Leong Fellow 2020 – 2023

REFEREED PUBLICATIONS

As 1st author:

1. Dynamics of Binary Planets within Star Clusters
   Huang, Zhu & Kokubo. ApJL 975, L38 (2024)
2. Primordial Orbital Alignment of Sednoids
   Huang, & Gladman. ApJL 962, L33 (2024)
3. A Rogue Planet Helps Populate the Distant Kuiper Belt
   Huang, Gladman, Beaudoin, & Zhang. ApJL 938, L23 (2022)
4. Free Inclinations for Transneptunian Objects in the Main Kuiper Belt
   Huang, Gladman, & Volk. ApJS 259, 54 (2022)
5. Four-billion year stability of the Earth–Mars belt
   Huang, & Gladman. MNRAS 500, 1151 (2021)
6. On the Instability of Saturn's Hypothetical Retrograde Co-orbitals
   Huang, Li, Li, & Gong. MNRAS 488, 2543 (2019)
7. Kozai-Lidov Mechanism inside Retrograde Mean Motion Resonances
   Huang, Li, Li, & Gong. MNRAS 481, 5401 (2018)
8. Dynamic Portrait of the Retrograde 1:1 Mean Motion Resonance
   Huang, Li, Li, & Gong. AJ 155, 262 (2018)

As 2nd/3rd author:

9. From planetesimals to dwarf planets by pebble accretion
   Ormel, & **Huang**. A&A 695, A251 (2025)
10. Asteroid Kamoʻoalewa's journey from the lunar Giordano Bruno crater to Earth 1:1 resonance
    Jiao, Cheng, **Huang**, et al. Nature Astronomy 8, 819 (2024)
11. OSSOS. XXIX. The Population and Perihelion Distribution of the Detached Kuiper Belt
    Beaudoin, Gladman, **Huang**, et al. PSJ 4, 145 (2023)
12. Flip mechanism of Jupiter-crossing orbits in the non-hierarchical triple system
    Li, Lei, **Huang**, & Gong. MNRAS 502, 5584 (2021)
13. Dynamics of retrograde 1/n mean motion resonances: the 1/-2, 1/-3 cases
    Li, **Huang**, & Gong. Astrophysics and Space Science 365, 165 (2020)

14. A semi-analytic model for the study of 1/1 resonant dynamics of the planar elliptic restricted co-orbital problem
Li, **Huang**, & Gong. Research in Astronomy and Astrophysics (2020)
15. Assess the Risk of Potentially Hazardous Asteroids through Mean Motion Resonance
Li, **Huang**, & Gong. Astrophysics and Space Science 364, 78 (2019)
16. Survey of asteroids in retrograde mean motion resonances with planets
Li, **Huang**, & Gong. A&A 630, A60 (2019)
17. Centaurs Potentially in Retrograde Co-orbit Resonance with Saturn
Li, **Huang**, & Gong. A&A 617, A114 (2018)

SCIENCE TEAMS

CLASSY: Classical and Large-A Solar System Survey — 2022 - Now
- Dynamical classification & modelling of discovered TNOs

FOSSIL: Formation of the Outer Solar System: an Icy Legacy — 2024 - Now
- Dynamical analysis of discovered objects & theoretical prediction

INVITED TALKS & SEMINAR

Shanghai Astronomical Observatory, Exoplanet Science Seminar (virtual) — Nov. 2024
New Horizons Science Plenary Meeting (virtual) — Aug. 2024
NAOJ Seminar, Tokyo — May 2024
DoA, Tsinghua, Beijing: The Rogue Planet Hypothesis — Mar. 2024
DoA, Tsinghua, Beijing: Dynamics of TNOs Under the Influence of a Rogue Planet — Aug. 2023

CONFERENCES & WORKSHOPS

As the presenter:
1. Dynamics of Binary Planets within Star Clusters
Young Transiting Planet Workshop, Ishigaki Island (2025)
2. Asteroid Kamoʻoalewa's journey from Giordano Bruno crater to Earth coorbital space
PERC Int'l Symposium on Dust & Parent Bodies, Tokyo (2025)
3. From Planetesimals to Dwarf Planets by Pebble Accretion
Pebbles in Planet Formation, Tokyo (2025)
4. A Rogue Planet Hypothesis for the Formation of the Outer Solar System
Rogue Worlds, Osaka (2024)
5. Dynamics of Binary Planets with Star Clusters
DoS + CfCA Workshop, Kawaguchiko (2024)
6. Testing the Primordial Orbital Alignment Using Backward Integrations
CfCA Annual Meeting, Tokyo (2024)
7. Dynamics of Binary Planet within Star Clusters (Poster)
JSPS Autumn, Fukuoka (2024)
8. Dynamics of Binary Planet within Star Clusters
DPS #56, Boise (2024)
9. Primordial Orbital Alignment of Sednoids
TNO 2024, Taipei (2024)
10. Dynamical Evolution of JuMBOs within Stellar Clusters
DDA #55, Toronto (2024)
11. Primordial Orbital Clustering of Sednoids | Video
DPS #55, San Antonio (2023)
12. A Gigantic Icy Body Reservoir Produced by an Early Rogue Planet | Abstract
ACM 2023, Flagstaff (2023)
13. Steady State of a Planet-scattering Debris Disk
DDA #54, East Lansing (2023)
14. Effect of a Rogue Planet on the Early Solar System | Video
DPS #54, London (Ontario)(2022)

15. A Clearer View of the Primordial Kuiper Belt's inclination structure
    COSPAR #44, Athens (2022)
16. A Rogue Planet Populated the Distant Kuiper Belt | Video
    DDA #53, New York (2022)
17. Dynamics of the Retrograde Co-orbital resonance
    COOMOT, Milan (2022)
18. Four Billion Year Stability of the Earth–Mars Belt
    DDA #51, virtual meeting (2020)
19. Four Billion Year Stability of the Earth–Mars Belt
    DPS #52, virtual meeting (2020)
20. Primordial Stability of the Earth–Mars Belt
    14th EPSC, virtual meeting (2020)
21. Dynamics of the Retrograde 1/1 Mean Motion Resonance
    DDA #49, San Jose (2018)

AWARDS AND SCHOLARSHIPS

Hayakawa Fund	2024
Japan Foundation for Promotion of Astronomy Fund	2024
Outstanding Graduate of Beijing	2019
Scholarship of Takada for Excellent Students of Tsinghua	2018
Second Prize in the 10th National Zhou Peiyuan Mechanics Competition	2015
Yu Menglun Scholarship	2014
Yu Menglun Award for Science & Innovation	2014
China National Scholarship	2013

PRESS COVERAGE & OUTREACH

Science: Where did Earth's oddball 'quasi-moon' come from? Scientists pinpoint famed lunar crater	2024
Space.com: Earth's weird 'quasi-moon' Kamo'oalewa is a fragment blasted out of big moon crater	2024
Phys.org: Computer model helps support theory of asteroid Kamo'oalewa as ejecta from the moon	2024
ScienceAlert: This Crater Could Be Where Earth's 'Second Moon' Broke Off The First One	2024
AAS Nova: Sednoids: Echoes of a Rogue Planet in the Early Solar System?	2024
Sky & Telescope: "Planet X" May Have Left Our Solar System Billions of Years Ago	2023
MacMillan Space Centre: Ask An Astronomer - Lunar New Year of the Rabbit	2023
New Scientist: A long-lost planet could explain unexpectedly distant asteroids	2022

PROFESSIONAL SERVICE

Referees for AJ, ApJ, MNRAS, A&A, and Icarus

TEACHING

T.A. for Astro 310, UBC	2021
T.A. for Astro 310 & 311, UBC	2020
T.A. for Astro 101, UBC	2019
T.A. for Vibration theory, Tsinghua University	2017
T.A. for Theoretical mechanics, Tsinghua University	2016

STUDENTS

Qingru Hu (胡清茹), Tsinghua (Undergraduate Student, Astronomy)	2024 – Now
Zhuoya Cao (曹卓雅), Tsinghua (Undergraduate Student, Physics)	2024 – Now

REFERENCES

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