

Yukun Huang 黄宇坤

CfCA, NAOJ
Tokyo 181-8588, Japan

yukunhuang.com
yhuang.astro@gmail.com

EDUCATION	Ph.D. in Astronomy, University of British Columbia (UBC), Canada M.S. in Aerospace Science, Tsinghua University, China	2019 – 2023 2016 – 2019
RESEARCH POSITIONS	Project Research Fellow, National Astronomical Observatory of Japan, Japan <i>Collaborator: Prof. Eiichiro Kokubo</i>	Apr. 2024 – Now
	Visiting Scholar, Tsinghua University, China <i>Collaborators: Prof. Wei Zhu & Prof. Chris Ormel</i>	Jan. 2024 – Mar. 2024
	Graduate Research Associate, UBC, Canada <i>Advisor: Prof. Brett Gladman</i>	2019 – 2023
	Research Associate, Tsinghua University, China <i>Advisor: Prof. Junfeng Li</i>	2015 - 2019
GRANTS & FELLOWSHIPS	JSPS Grant-in-Aid (KAKENHI) for Early-Career Scientists NAOJ Project Research Fellow Edwin S.H. Leong Fellow	2025 – Now 2024 – Now 2020 – 2023
REFEREED PUBLICATIONS	As 1st author: 1. Analytical Solutions for Planet-Scattering Small Bodies Huang, Gladman, & Kokubo. submitted to AJ (2025) 2. Dynamics of Binary Planets within Star Clusters Huang, Zhu, & Kokubo. ApJL 975, L38 (2024) 3. Primordial Orbital Alignment of Sednoids Huang, & Gladman. ApJL 962, L33 (2024) 4. A Rogue Planet Helps Populate the Distant Kuiper Belt Huang, Gladman, Beaudoin, & Zhang. ApJL 938, L23 (2022) 5. Free Inclinations for Transneptunian Objects in the Main Kuiper Belt Huang, Gladman, & Volk. ApJS 259, 54 (2022) 6. Four-billion year stability of the Earth–Mars belt Huang, & Gladman. MNRAS 500, 1151 (2021) 7. On the Instability of Saturn’s Hypothetical Retrograde Co-orbitals Huang, Li, Li, & Gong. MNRAS 488, 2543 (2019) 8. Kozai-Lidov Mechanism inside Retrograde Mean Motion Resonances Huang, Li, Li, & Gong. MNRAS 481, 5401 (2018) 9. Dynamic Portrait of the Retrograde 1:1 Mean Motion Resonance Huang, Li, Li, & Gong. AJ 155, 262 (2018) As 2nd/3rd author: 10. Early Stellar Flybys are Unlikely: Improved Constraints from Sednoids and Large-q TNOs Hu, Huang, Gladman, & Zhu. ApJ in press (2025) 11. Discovery and dynamics of a Sedna-like object with a perihelion of 66 au Chen, Lykawka, & Huang, et al. Nature Astronomy (2025) 12. From planetesimals to dwarf planets by pebble accretion Ormel, & Huang. A&A 695, A251 (2025) 13. Asteroid Kamo’oalewa’s journey from the lunar Giordano Bruno crater to Earth 1:1 resonance Jiao, Cheng, Huang, et al. Nature Astronomy 8, 819 (2024)	

14. **OSSOS. XXIX. The Population and Perihelion Distribution of the Detached Kuiper Belt**
Beaudoin, Gladman, **Huang**, et al. PSJ 4, 145 (2023)
15. **Flip mechanism of Jupiter-crossing orbits in the non-hierarchical triple system**
Li, Lei, **Huang**, & Gong. MNRAS 502, 5584 (2021)
16. **Dynamics of retrograde 1/n mean motion resonances: the 1/-2, 1/-3 cases**
Li, **Huang**, & Gong. Astrophysics and Space Science 365, 165 (2020)
17. **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)
18. **Assess the Risk of Potentially Hazardous Asteroids through Mean Motion Resonance**
Li, **Huang**, & Gong. Astrophysics and Space Science 364, 78 (2019)
19. **Survey of asteroids in retrograde mean motion resonances with planets**
Li, **Huang**, & Gong. A&A 630, A60 (2019)
20. **Centaur 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

PROFESSIONAL SERVICE Referee for AJ, ApJ, MNRAS, A&A, and Icarus
 Reviewer for NASA “Emerging Worlds” Grant Proposal
 Co-organizer of the NAOJ Planet Seminar

INVITED TALKS & SEMINAR ISSI Forum, “Observational Tests of the Dynamical Models for Outer Solar System Formation”, Bern Sept. 2025
 Exoplanets & Planet Formation Workshop 2025, Kunming Aug. 2025
 ALMA Project Science Coffee, NAOJ, Tokyo Jul. 2025
 Narita Lab Seminar, University of Tokyo, Tokyo Apr. 2025
 ELSI Seminar, Science Tokyo, Tokyo Apr. 2025
 Exoplanet Science Seminar, Shanghai Astronomical Observatory (virtual) Nov. 2024
 New Horizons Science Plenary Meeting (virtual) Aug. 2024
 NAOJ Seminar, NAOJ, Tokyo May 2024
 DoA Seminar, Tsinghua University, Beijing Mar. 2024

CONFERENCES & WORKSHOPS As the presenter:

1. A Rogue Planet Hypothesis for the Formation of the Outer Solar System
Japan Geoscience Union Meeting 2025, Tokyo (2025)
2. Dynamics of Binary Planets within Star Clusters
Young Transiting Planet Workshop, Ishigaki Island (2025)
3. Asteroid Kamo‘oalewa’s journey from Giordano Bruno crater to Earth coorbital space
PERC Int’l Symposium on Dust & Parent Bodies, Tokyo (2025)
4. From Planetesimals to Dwarf Planets by Pebble Accretion
Pebbles in Planet Formation, Tokyo (2025)
5. A Rogue Planet Hypothesis for the Formation of the Outer Solar System
Rogue Worlds, Osaka (2024)
6. Dynamics of Binary Planets with Star Clusters
DoS + CfCA Workshop, Kawaguchiko (2024)

7. Testing the Primordial Orbital Alignment Using Backward Integrations
CfCA Annual Meeting, Tokyo (2024)
8. Dynamics of Binary Planet within Star Clusters (Poster)
JSPS Autumn, Fukuoka (2024)
9. Dynamics of Binary Planet within Star Clusters
DPS #56, Boise (2024)
10. Primordial Orbital Alignment of Sednoids
TNO 2024, Taipei (2024)
11. Dynamical Evolution of JuMBOs within Stellar Clusters
DDA #55, Toronto (2024)
12. Primordial Orbital Clustering of Sednoids | [Video](#)
DPS #55, San Antonio (2023)
13. A Gigantic Icy Body Reservoir Produced by an Early Rogue Planet
ACM 2023, Flagstaff (2023)
14. Steady State of a Planet-scattering Debris Disk
DDA #54, East Lansing (2023)
15. Effect of a Rogue Planet on the Early Solar System | [Video](#)
DPS #54, London (Ontario)(2022)
16. A Clearer View of the Primordial Kuiper Belt's inclination structure
COSPAR #44, Athens (2022)
17. A Rogue Planet Populated the Distant Kuiper Belt | [Video](#)
DDA #53, New York (2022)
18. Dynamics of the Retrograde Co-orbital resonance
COOMOT, Milan (2022)
19. Four Billion Year Stability of the Earth–Mars Belt
DDA #51, virtual meeting (2020)
20. Four Billion Year Stability of the Earth–Mars Belt
DPS #52, virtual meeting (2020)
21. Primordial Stability of the Earth–Mars Belt
14th EPSC, virtual meeting (2020)
22. 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	Space.com : Astronomers discover a cosmic 'fossil' at the edge of our solar system.	2025
	Forbes : Meet 'Ammonite' — A New World Just Found In The Solar System	2025
	Subaru Telescope : Subaru Telescope Discovers "Fossil" of the Early Solar System	2025
	BBC : Ancient relic discovered on the edge of our Solar System could help solve the Planet Nine mystery	2025
	Science : Where did Earth's oddball 'quasi-moon' come from? Scientists pinpoint famed lunar crater	2024
	CNN : Scientists say they've traced the origins of a potentially hazardous NEA to the far side of the moon	2024
	Phys.org : Computer model helps support theory of asteroid Kamo'oalewa as ejecta from the moon	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
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 (Graduate student, Astronomy)	2024 – Now
	Zhuoya Cao (曹卓雅), Tsinghua (Undergrad, Physics)	2024
REFERENCES	Brett Gladman University of British Columbia Vancouver, BC, Canada gladman@astro.ubc.ca Eiichiro Kokubo (小久保英一郎) NAOJ Mitaka, Tokyo, Japan kokubo.eiichiro@nao.ac.jp	
	Wei Zhu (祝伟) Tsinghua University Beijing, China weizhu@tsinghua.edu.cn Patryk S. Lykawka Kindai University Osaka, Japan patryksan@gmail.com	
	Kat Volk Planetary Science Institute Tucson, Arizona, USA kat.volk@gmail.com Chris Ormel Tsinghua University Beijing, China chrisormel@tsinghua.edu.cn	
	Fumi Yoshida (吉田二美) Planetary Exploration Research Center Fukuoka, Japan fumi.yoshida.ermei@gmail.com Junfeng Li (李俊峰) Tsinghua University Beijing, China lijunf@mail.tsinghua.edu.cn	