

University of Tokyo (Japan), Ph.D student

TOKUNO Takato (徳野 鷹人)

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🔍 Research Interest

1. The Sun and Low-mass Stars

- 1.1 Solar/Stellar Rotation
- 1.2 Solar/Stellar Magnetic Activity (Spot/Flare)
- 1.3 Stellar Oscillation (Asteroseismology)

2. Hot Jupiter

- 2.1 Tidal Interaction between Star and Planet

3. Super Nova / Compact Object

- 3.1 Compact Binaries

📅 Job History

- 2026 Apr. – (Planned) **Post-doctoral Fellowship in University of Osaka, Japan** : Research Fellowships for Young Scientists (JSPS PD)
- 2024 Apr. – 2026 Mar. **Doctoral Fellowship in University of Tokyo, Japan** : DC2 Research Fellowships for Young Scientists (JSPS DC2)
- 2025 Apr. – 2026 Mar. **Part-time Lecturer in National Institute of Technology Numazu College, Japan**
- 2021 Oct. – 2024 Mar. **Pre-doctoral Fellowship in University of Tokyo, Japan** : Fellowship of Faculty of Science (IGPEES)

🎓 Education History

- 2026 Mar. **Ph.D Astronomy** in University of Tokyo.
Thesis title: *Rotation and Magnetic Activity of the Sun and Solar-type Stars with Novel Characteristics.*
- 2023 Mar. **M.Sc. Astronomy** in University of Tokyo.
Thesis title: *Weakened magnetic braking mechanism through latitudinal differential rotation on spin-down of solar-type star.*
- 2022 Aug. **B.A. Regional Science** in National Institution for Academic Degrees and Quality Enhancement of Higher Education.
Thesis title: *Origin of the regional linguistic construction in South Asian languages: the 'dative subject' construction.*
- 2021 Mar. **B.Sc. Astronomy** in University of Tokyo.
Thesis title: *Asteroseismology about the resonance of the waves in the core & the envelope of γ Dor stars.*

Publications

Journal Articles

- [1] Shiraishi, Y., Hotokezaka, K., Masuda, K., Honda, S., Tanikawa, A., Janssens, S., **Tokuno, T.**, Shimasue, T., Honjo, R., Sato, B., Omiya, M., Tajitsu, A. & Izumiura, H. (2025). “Two unseen massive white dwarf candidates in close binaries”. *arXiv e-prints*, arXiv:2509.12808.
- [2] **Tokuno, T.** (2025). “Engulfment of a hot Jupiter as a possible origin of the rapid spin and internal spin misalignment of the planet-hosting red giant Kepler-56”. *Monthly Notices of the Royal Astronomical Society* 544.3, 2835–2847.
- [3] **Tokuno, T.**, Namekata, K., Maehara, H. & Toriumi, S. (2025). “Temporal Variation of Flare Occurrence Rates via the Spot Evolution on the Sun and Solar-type Stars”. *Astrophysical Journal* 985.2, 158.
- [4] Matsuoka, M., Suzuki, T. K., **Tokuno, T.** & Kakiuchi, K. (2024). “Effect of Magnetic Diffusion in the Chromosphere on the Solar Wind”. *Astrophysical Journal* 970.1, 16.
- [5] **Tokuno, T.**, Fukui, A. & Suzuki, T. K. (2024). “A Novel Method to Constrain Tidal Quality Factor from A Nonsynchronized Exoplanetary System”. *Astrophysical Journal* 973.2, 128.
- [6] **Tokuno, T.**, Suzuki, T. K. & Shoda, M. (2023). “Transition of latitudinal differential rotation as a possible cause of weakened magnetic braking of solar-type stars”. *Monthly Notices of the Royal Astronomical Society* 520.1, 418–436.
- [7] **Tokuno, T.** & Takata, M. (2022). “Asteroseismology of the dip structure in period-spacings of rapidly rotating γ Doradus stars caused by the coupling between core and envelope oscillations”. *Monthly Notices of the Royal Astronomical Society* 514.3, 4140–4159.

Referees

Journal (3 papers)

Astronomy & Astrophysics

Miscellaneous Experience

Awards

- 2025 **The Excellence Award for Final Examination**, The University of Tokyo, The School of Science, International Graduate Program for Excellence in Earth-Space Science (IGPEES)
- 2023 **The Encouragement Award for Graduate programs (Master Course)**, The University of Tokyo, The School of Science, Department of Astronomy
- The Excellence Award for Qualification Examination**, The University of Tokyo, The School of Science, International Graduate Program for Excellence in Earth-Space Science (IGPEES)
- Repayment Exemption for Students with Excellent Grades**, Japan Student Services Organization (JASSO), Type I (interest-free) scholarship

(Last Update: 1st Mar. 2026)