Tianjun Gan

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Education

2018.09 – 2023.09 (expected)	PhD in Astronomy, Tsinghua University, Beijing, China
2014.09 – 2018.06	BS in Physics, Zhejiang University, Zhejiang, China

Research Interests

Formation, evolution and occurrence rate of giant planets around M-type stars;
Characterization and population statistics of BDs and low-mass M dwarfs.
Connection between stellar abundance pattern and planet formation, esp. solar twins;
Transiting planet detection, follow-up and characterization.

Research Programs

TESS+LCO+CFHT M dwarf planet candidate follow-up program, Lead	2019-Present;
TESS+LCO low mass stellar companion program, Lead	2019-Present;
LCO Key Followup Program for TESS (PI: Avi Shporer), Member	2019-Present;
Magellan TESS Survey (PI: Johanna Teske), Member	2020-Present;
TESS Follow-up Observing Program (TFOP), Member	2019-Present.

Observing Proposals & Experience

As PI or Science PI:

2022B	1.5 night on the CFHT (SPIRou); spectroscopy– *Mass measurement of a hot Jupiter around an M dwarf delivered by TESS*
2022B	1 night on the Xinglong 2.16m telescope; spectroscopy – *Rossiter-McLaughlin observation for TOI-1830: An eccentric low mass stellar companion around a young star*
2022A	60 hours on SMARTS 1.5-m Telescope (CHIRON); spectroscopy – *Investigating the solar depletion pattern with TESS solar analogs*
2021A	2 night on the CFHT (SPIRou); spectroscopy – *Mass determination for a planet around an M dwarf close to the radius valley*
2021A	3 nights on the LCOGT network (1m0 Sinistro); photometry – *Follow-up observations for TESS planet candidates*
2020A	1 night on the CFHT (SPIRou); spectroscopy – *Confirmation of the sixth transiting giant planet around an M dwarf*
2020A	7.5 nights on the LCOGT network (1m0 Sinistro); photometry – *Photometric followup observations for TESS hot Jupiters around M dwarfs*

As Co-I:

2022A	4 nights on LCOGT network (1m0 NRES); spectroscopy – *Radial Velocity Follow-ups of TESS Discovered Small Planets to Search for Additional Gas Giants* (PI: Xinyan Hua)

2020A-2021B	10/800/400 hours on LCOGT 2m0/1m0/0m4 telescopes; photometry – *Coordinated photometric follow-up of TESS candidates* (PI: Karen A. Collins)
2020-now	100/1000/800 hours each semester on LCOGT 2m0/1m0/0m4 telescopes; photometry+spectroscopy – *Standing on the shoulders of the network: Follow-up of TESS planet candidates with LCO* (key proposal, PI: Avi Shporer)
2019B	10/180/360 hours on LCOGT 2m0/1m0/0m4 telescopes; photometry – *Coordinated photometric follow-up of TESS candidates* (PI: Markus Rabus)

Publication List

7 as the leading author, 45 contributed work (2 major contributions); 750+ total citations; h-index = 15;
*** = student supervised**

Leading Author: ADS Library

1. Lin, Z. (*), **Gan T.**, et al., *One high mass brown dwarf and two objects near the hydrogen burning mass limit*, in prep
2. **Gan, T.** & Wang, X. S., et al., *Occurrence rate of hot Jupiters around M dwarfs based on TESS Primary Mission*, AJ, in review
3. **Gan, T.** & Soubkiou, A., et al., *TESS discovery of a sub-Neptune orbiting a mid-M dwarf TOI-2136*, 2022, MNRAS, 514, 4120
4. **Gan, T.** & Lin, Z. (*), et al., *TOI-530b: A giant planet transiting an M dwarf detected by TESS*, 2021, MNRAS, 511, 83
5. **Gan, T.** & Bedell, M., et al., *HD 183579b: a warm sub-Neptune transiting a solar twin detected by TESS*, 2021, MNRAS, 507, 2220
6. **Gan, T.** & Wang, X. S., et al., *Revisiting the HD 21749 planetary system with stellar activity modelling*, 2021, MNRAS, 501, 6042
7. **Gan, T.** & Shporer, A., et al., *LHS 1815b: The First Thick-disk Planet Detected by TESS*, 2020, AJ, 159, 160

Selected Contributed Work: (Full Publication List, 45 in total: ADS Library)

1. Sun, Q. & Wang, X. S., **Gan T.**, et al., *A Search for Exoplanets in Open Clusters and Young Associations based on TESS Objects of Interest*, 2022, RAA, 22, 7
2. Teske, J. & Wang, X. S., Wolfgang, A., **Gan, T.**, et al., *The Magellan-TESS Survey. I. Survey Description and Midsurvey Results*, 2021, ApJS, 256, 33
3. Zhu W., et al. (incl. **Gan, T.**), *Two Candidate KH 15D-like Systems from the Zwicky Transient Facility*, 2022, AJ, 933, 21
4. Boley K., et al. (incl. **Gan, T.**), *Searching For Transiting Planets Around Halo Stars. II. Constraining the Occurrence Rate of Hot Jupiters*, 2021, AJ, 162, 85
5. Hedges C., et al. (incl. **Gan, T.**), *TOI-2076 and TOI-1807: Two Young, Comoving Planetary Systems within 50 pc Identified by TESS that are Ideal Candidates for Further Follow Up*, 2021, AJ, 162, 54

6. Dong J., et al. (incl. **Gan, T.**), *Warm Jupiters in TESS Full-frame Images: A Catalog and Observed Eccentricity Distribution for Year 1*, 2021, ApJS, 255, 6
7. Rodriguez J., et al. (incl. **Gan, T.**), *TESS Delivers Five New Hot Giant Planets Orbiting Bright Stars from the Full-frame Images*, 2021, AJ, 161, 194
8. Armstrong D., et al. (incl. **Gan, T.**), *A remnant planetary core in the hot-Neptune desert*, 2020, Nature, 583, 39
9. Günther M., et al. (incl. **Gan, T.**), *A super-Earth and two sub-Neptunes transiting the nearby and quiet M dwarf TOI-270*, 2019, Nature, 3, 1099
10. Vanderspek R., et al. (incl. **Gan, T.**), *TESS Discovery of an Ultra-short-period Planet around the Nearby M Dwarf LHS 3844*, 2019, ApJ, 871, 24

Selected Seminar and Conference Talks, Posters

2022.01 CFHT/SPIRou Science Seminars: *Investigating the mysteries of planets around M dwarfs with SPIRou* (**Invited Talk**)
2021.12 The 6th China's Telescope Access Program User Meeting: *Radius valley of small planets around M dwarfs* (**Invited Talk**)
2021.01 The 5th China's Telescope Access Program User Meeting: *TESS follow-up observations with LCO and CFHT* (**Invited Talk**)
2020.12 Earth 2.0 (ET) Mission workshop: *Hands-on Section on the introduction of ground-based photometry and AstroImageJ* (**Invited Talk**)
2020.12 Earth 2.0 (ET) Transit Space Mission Science Meeting: *ET ground-based follow-up observations* (**Invited Talk**)

2022.07 Cool Stars 21 conference: *Statistics of hot Jupiters around M dwarfs with TESS* (Poster)
2021.12 Chinese Astronomical Society Meeting: *Investigating the solar depletion pattern with TESS* (Contributed Talk)
2021.08 TESS Science Conference II: *Hunting for TESS planets around solar twins* (Contributed Talk)
2021.06 Chinese Planetary Science Society Annual Conference: *Chasing special TESS planetary systems* (Contributed Talk)

Teaching and Mentoring Experience

2022 Spring TA for Observational Astronomy (Instructor: Prof. Xuesong Wang)
2020 & 2021 Fall TA for The Beauty of the Universe (Instructor: Prof. Shude Mao)

2022 – now Ximing Xu, Undergraduate at Western University, Canada; TFOP member.
2020 – now Zitao Lin, Undergraduate at Tsinghua University; Now PhD candidate at Tsinghua University; TFOP member.
2020 – 2021 Gavin Wang, High school student from Tsinghua International School and Stanford Online High School; Now undergraduate student at Johns Hopkins University; TFOP member.

Awards

2021 National Scholarship, Tsinghua University (*Highest Student Award*)
2020 First-class Academic Scholarship, Tsinghua University
2019 First-class AMD Scholarship, Tsinghua University
2017 Second-class Academic Scholarship，Zhejiang University
2016 National Scholarship, Zhejiang University (*Highest Student Award*)
2015 National Encouragement Scholarship, Zhejiang University
2015 First-class Academic Scholarship，Zhejiang University

VISITING EXPERIENCE

- 2019.10 – 2020.01: Visiting Student, host: Stephen Shectman, Observatories of the Carnegie Institution for Science, 813 Santa Barbara Street, Pasadena, CA 91101, USA