Curriculum Vitae
Dr. Yaoting Yan (闫耀庭)

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Date of Birth:	December 14, 1993
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Research Interests

★ Star formation ★ Astronomical masers ★ Astrochemistry ★ Origin of elements ★ Isotope abundance ratios ★ Molecular outflows ★ Magnetic fields ★ Hot molecular cores ★ Nucleosynthesis ★ Galactic chemical-evolution model ★ NGC 253

Education

Oct. 22, 2024	Dr. rer. nat., University of Bonn
Thesis	The Influence of Stellar Objects onto the Interstellar Medium: Isotopic Compositions and Maser Lines
Supervisors	Dr. Christian Henkel, Prof. Dr. Karl M. Menten
	Graduated with honors (*Magna cum laude*)
2016-2019	M.S. in Astronomy, Guangzhou University (GZHU)
Thesis	A Systematic TMRT Observational Study of Galactic $^{12}C/^{13}C$ Ratios from Formaldehyde
Supervisor	Prof. Dr. Jiangshui Zhang
	Prize for excellent graduate student
2012-2016	B.S. in Optical Information Science and Technology, GZHU

Professional Experience

Since Jun. 2025	Referee of Astronomy & Astrophysics
Since Nov. 2024	Postdoctoral researcher, Max-Planck-Institut für Radioastronomie (MPIfR)
Since Sept. 2023	Referee of The Astrophysical Journal
2019-2024	Research for Ph.D. thesis at the MPIfR
2016-2019	Research for M.S. thesis at the Center for Astronomy, GZHU

Honors & Awards

2022.09-2023.03	Ph.D. scholarship from the MPIfR
2019.09-2022.09	Ph.D. scholarship from the China Scholarship Council (CSC)
2019	Excellent Graduate Student Award from the GZHU
2017, 2018	Annual College scholarship from the GZHU
2016	Annual Graduate Student Entrance scholarship from the GZHU
2015	The 13th Challenge Cup of Guangdong Undergraduate Students Extracurricular Academic Science and Technology Competition Second Prize
2014	The 14th Guangzhou University Challenge Cup Competition First Prize
2013, 2014	Annual College scholarship from the GZHU
2013, 2014	Outstanding Student Leader Award from the GZHU

Publications

In total: 26 refereed papers and 1 non-refereed paper.
A complete list of publications can be found via ADS
First-author (five refereed papers, ADS):
With citation counts based on the ADS data till August 13, 2025.

1. **Yan, Y. T.**; Henkel, C.; Menten, K. M.; Wilson, T. L.; Wootten, A.; Gong, Y.; Wyrowski, F.; Yang, W,; Brunthaler, A.; Kraus A.; Winkel, B.; *Discovery of widespread non-metastable ammonia masers in the Milky Way*, 2024, A&A, 686, A205 [Citations: 2]

2. **Yan, Y. T.**; Henkel, C.; Kobayashi, C.; Menten, K. M.; Gong, Y.; Zhang, J. S.; Yu, H. Z.; Yang, K.; Xie, J. J.; Wang, Y. X.; *Direct measurements of carbon and sulfur isotope ratios in the Milky Way*, 2023, A&A, 670, A98 [Citations: 43]

3. **Yan, Y. T.**; Henkel, C.; Menten, K. M.; Gong, Y.; Nguyen, H.; Ott, J.; Ginsburg A., Wilson, T. L.; Brunthaler, A.; Belloche, A.; Zhang, J. S.; Budaiev, N.; Jeff, D.; *Discovery of non-metastable ammonia masers in Sagittarius B2*, 2022, A&A, 666, L15 [Citations: 5]

4. **Yan, Y. T.**; Henkel, C.; Menten, K. M.; Gong, Y.; Ott, J.; Wilson, T. L.; Wootten, A.; Brunthaler, A.; Zhang, J. S.; Chen, J. L.; Yang, K.; *Discovery of ammonia (9,6) masers in two high-mass star-forming regions*, 2022, A&A, 659, A5 [Citations: 7]

5. **Yan, Y. T.**; Zhang, J. S.; Henkel, C.; Mufakharov, T.; Jia, L. W.; Tang, X. D.; Wu, Y. J.; Li, J.; Zeng, Z. A.; Wang, Y. X.; Li, Y. Q.; Huang, J.; Jian, J. M.; *A Systematic TMRT Observational Study of Galactic $^{12}C/^{13}C$ Ratios from Formaldehyde*, 2019, ApJ, 877, 154 [Citations: 57]

Co-author (21 refereed papers):

1. Alkhuja, E.; Henkel, C.; **Yan, Y. T.**; Winkel, B.; Gong, Y.; Wu, G.; Wilson, T. L.; Wootten, A.; Malawi, A.; *Ammonia in the hot core W51-IRS2: Maser line profiles, variability and saturation*, 2025, accepted for publication in A&A [Citations: 0]

2. Chen, J. L.; Zhang, J. S.; Ge, J.X.; Wang, Y. X.; Yu, H. Z.; Zou, Y. P.; **Yan, Y. T.**; Wang, X. Y.; Wei, D. Y.; *The Chemical Clock of High-mass Star-forming Regions: N_2H^+/CCS*, 2025, AJ, 170, 74 [Citations: 0]

3. Gong, Y.; Henkel, C.; Bop, C. T.; Mangum, J. G.; Behrens, E.; Du, F. J.; Zhang, S. B.; Martín, S.; Menten, K. M.; Harada, N.; Bouvier, M.; Tang, X. D.; Tanaka, K.; Viti, S.; **Yan, Y. T.**; Yang, W.; Mao, R. Q.; Quan, D. H.; *Shock-induced $HCNH^+$ abundance enhancement in the heart of the starburst galaxy NGC 253 unveiled by ALCHEMI*, 2025, A&A, 696, A31 [Citations: 0]

4. Humire, Pedro K.; Dey, Subhrata; Ronconi, Tommaso; Sasse, Victor H.; Cid Fernandes, Roberto; Martín, Sergio; Donevski, Darko; Malek, Katarzyna; Fernández-Ontiveros, Juan A.; Song, Yiqing ; Hamed, Mahmoud; Mangum, Jeffrey G.; Henkel, Christian; Rivilla, Víctor M.; Colzi, Laura; Harada, N.; Demarco, Ricardo; Goyal, Arti; Meier, David S.; Panda, Swayamtrupta; Krabbe, Ângela C.; **Yan, Yaoting**; Lopes, Amanda R.; Sakamoto, K.; Muller, S.; Tanaka, K.; Yoshimura, Y.; Nakanishi, K.; Kanaan, Antonio; Ribeiro, Tiago; Schoenell, William; Mendes de Oliveira, Claudia; *Spatially-resolved spectro-photometric SED Modeling of NGC 253's Central Molecular Zone I. Studying the star formation in extragalactic giant molecular clouds*, 2025, A&A, 699, A183 [Citations: 4]

5. Li, Yuqiang; Wang, Junzhi; Li, Juan; Rayalacheruvu, Prathap; Majumdar, Liton; **Yan, Yaoting**; Quan, Donghui; Lu, Xing; Zheng, Siqi; *The Deuterium Fractionation of NH_3 in Massive Star-forming Regions*, 2025, ApJ, 978, 156 [Citations: 0]

6. Chen, J. L.; Zhang, J. S.; Henkel, C.; **Yan, Y. T.**; Yu, H. Z.; Wang, Y. X.; Zou, Y. P.; Zhao, J. Y.; Wang, X. Y.; *Interstellar Nitrogen Isotope Ratios: Measurements on tracers of C ^{14}N and C ^{15}N* , 2024, ApJ, 971, 164 [Citations: 2]

7. Bouvier, M.; Viti, S.; Behrens, E.; Butterworth, J.; Huang, K. -Y.; Mangum, J. G.; Harada, N.; Martín, S.; Rivilla, V. M.; Muller, S.; Sakamoto, K.; Yoshimura, Y.; Tanaka, K.; Nakanishi, K.; Herrero-Illana, R.; Colzi, L.; Gorski, M. D.; Henkel, C.; Humire, P. K.; Meier, D. S.; van der Werf, P. P.; **Yan, Y. T.** *An ALCHEMI inspection of sulphur-bearing species towards the central molecular zone of NGC 253*, 2024, A&A, 689, A64 [Citations: 7]

8. Butterworth, J.; Viti, S.; Van der Werf, P. P.; Mangum, J. G.; Martín, S.; Harada, N.; Emig, K. L.; Muller, S.; Sakamoto, K.; Yoshimura, Y.; Tanaka, K.; Herrero-Illana, R.; Colzi, L.; Rivilla, V. M.; Huang, K. Y.; Bouvier, M.; Behrens, E.; Henkel, C.; **Yan, Y. T.**; Meier, D. S.; Zhou, D.; *Molecular isotopologue measurements toward super star clusters and the relation to their ages in NGC253 with ALCHEMI*, 2024, A&A, 686, A31 [Citations: 7]

9. Gong, Y.; Henkel, C.; Menten, K. M.; R. Chen, C. -H.; Zhang, Z. Y.; **Yan, Y. T.**; Weiss, A.; Langer, N.; Wang, J. Z.; Mao, R. Q.; Tang, X. D.; Yang, W.; Ao, Y. P.; Wang, M.; *Sulfur Isotope Ratios in the Large Magellanic Cloud*, 2023, A&A, 679, L6 [Citations: 4]

10. Zou, Y. P.; Zhang, J. S.; Henkel, C.; Romano, D.; Liu, W.; Zheng, Y. H.; **Yan, Y. T.**; Chen, J. L.; Wang, Y. X.; Zhao, J. Y.; *A Systematic Observational Study on Galactic Interstellar Ratio $^{18}O/^{17}O$. II. $C^{18}O$ and $C^{17}O$ J = 2-1 Data Analysis*, 2023, ApJS, 268, 56 [Citations: 2]

11. Zhu, Feng-Yao; Wang, Junzhi; **Yan, Yaoting**; Zhu, Qing-Feng; Li, Juan; *Origins of the shocks in high-mass starless clump candidates*, 2023, MNRAS, 523, 2770Z [Citations: 2]

12. Zhao, J. Y.; Zhang, J. S.; Wang, Y. X.; Qiu, J. J.; **Yan, Y. T.**; Yu, H. Z.; Chen, J. L.; Zou, Y. P.; *A Multitransition Methanol Survey toward a Large Sample of High-mass Star-forming Regions*, 2023, ApJS, 266, 29 [Citations: 3]

13. Zhu, Feng-Yao; Wang, Junzhi; **Yan, Yaoting**; Zhu, Qing-Feng; Li, Juan; *Spatial distributions and kinematics of shocked and ionized gas in M17*, 2023, MNRAS, 522, 503Z [Citations: 3]

14. Wang, Y. X.; Zhang, J. S.; Yu, H. Z.; Wang, Y.; **Yan, Y. T.**; Chen, J. L.; Zhao, J. Y.; Zou, Y. P.; *A Possible Chemical Clock in High-mass Star-forming Regions: $N(HC_3N)/N(N_2H^+)$?*, 2023, ApJS, 264, 48 [Citations: 2]

15. Qiu, Jian-Jie; Zhang, Yong; Nakashima, Jun-ichi; Zhang, Jiang-Shui; Koning, Nico; Tang, Xin-Di; **Yan, Yao-Ting**; Feng, Huan-Xue; *Molecules in the peculiar age-defying source IRAS 19312+1950*, 2023, A&A, 669, A121 [Citations: 8]

16. Wang, Y. X.; Zhang, J. S.; **Yan, Y. T.**; Qiu, J. J.; Chen, J. L.; Zhao, J. Y.; Zou, Y. P.; Wu, X. C.; He, X. L.; Gong, Y. B.; Cai, J. H.; *Cyanopolyyne line survey towards high-mass star-forming regions with TMRT*, 2022, A&A, 663, A177 [Citations: 4]

17. Chen, J. L.; Zhang, J. S.; Henkel, C.; **Yan, Y. T.**; Yu, H. Z.; Qiu, J. J.; Tang, X. D.; Wang, J.; Liu, W.; Wang, Y. X.; Zheng, Y. H.; Zhao, J.; *Interstellar Nitrogen Isotope Ratios: New NH_3 Data from the Galactic Center out to the Perseus Arm*, 2021, ApJS, 257, 39 [Citations: 7]

18. Martín, S.; Mangum, J. G.; Harada, N.; Costagliola, F.; Sakamoto, K.; Muller, S.; Aladro, R.; Tanaka, K.; Yoshimura, Y.; Nakanishi, K.; Herrero-Illana, R.; Mühle, S.; Aalto, S.; Behrens, E.; Colzi, L.; Emig, K. L.; Fuller, G. A.; García-Burillo, S.; Greve, T. R.; Henkel, C.; Holdship, J.; Humire, P.; Hunt, L.; Izumi, T.; Kohno, K.; König, S.; Meier, D. S.; Nakajima, T.; Nishimura, Y.; Padovani, M.; Rivilla, V. M.; Takano, S.; van der Werf, P. P.; Viti, S.; **Yan, Y. T.**; *ALCHEMI: an ALMA Comprehensive High-resolution Extragalactic Molecular Inventory. Survey presentation and first results from the ACA array*, 2021, A&A, 656, A46 [Citations: 66]

19. Xie, Jin-Jin; Wu, Jing-Wen; Fuller, Gary A.; Peretto, Nicolas; Ren, Zhi-Yuan; Chen, Long-Fei; **Yan, Yao-Ting**; Li, Guo-Dong; Duan, Yan; Xia, Ji-Feng; Wang, Yong-Xiong; Li, Di.; *Studying infall in infrared dark clouds with multiple HCO^+ transitions*, 2021, RAA, 21, 208 [Citations: 3]

20. Yu, H. Z.; Zhang, J. S.; Henkel, C.; **Yan, Y. T.**; Liu, W.; Tang, X. D.; Langer, N.; Luan, T. C.; Chen, J. L.; Wang, Y. X.; Deng, G. G.; Zou, Y. P.; *Galactic Interstellar Sulfur Isotopes: A Radial $^{32}S/^{34}S$ Gradient?*, 2020, ApJ, 899, 145 [Citations: 18]

21. Zhang, J. S.; Liu, W.; **Yan, Y. T.**; Yu, H. Z.; Liu, J. T.; Zheng, Y. H.; Romano, D.; Zhang, Z. -Y.; Wang, J. Z.; Chen, J. L.; Wang, Y. X.; Zhang, W. J.; Lu, H. H.; Chen, L. S.; Zou, Y. P.; Yang, H. Q.; Wen, T.; Lu, F. S.; *A Systematic Observational Study on Galactic Interstellar Ratio $^{18}O/^{17}O$. I. $C^{18}O$ and $C^{17}O$ J = 1-0 Data Analysis*, 2020, ApJS, 249, 6 [Citations: 17]

1 non-refereed paper:

1. Zhang, J. S.; **Yan, Y. T.**; Liu, W.; Yu, H. Z.; Chen, J. L.; Henkel, C.; *Systematic observations on Galactic Interstellar isotope ratios*, 2020, IAUGA, 30, 278 [Citations: 2]

Accepted Observation Proposals as PI

In total: 1874.3 hours

▶ The 100-m Effelsberg Radio Telescope, **158.3** hours
→ project IDs: *13-20, 91-20, 30-22, 34-22, 68-22.*
▶ The IRAM 30-m Telescope, **406.5** hours
→ project IDs: *004-20, 117-20, 125-20, 031-21, 033-21, 047-21, 063-22, 103-23, 133-24, 137-24, 036-25, 041-25.*
▶ The Karl G. Jansky Very Large Array, **8.5** hours
→ project IDs: *VLA/21A-157, VLA/22A-106, VLA/24B-174.*
▶ NASA/JPL Deep Space Network DSS-43 70-m Telescope, **45.0** hours
▶ The Atacama Pathfinder Experiment (APEX), **24.0** hours
→ project ID: *M9509C_113.*
▶ The ARO 12-M Telescope, **470.0** hours
→ project IDs: *Yan-2016B, 2017B, 2018B, 2019A, 2020A.*
▶ The James Clerk Maxwell Telescope, **165.0** hours
→ project IDs: *M16BP037, M16XP019, M19AP021.*
▶ The Shanghai Tianma 65m Radio Telescope, **400.0** hours
▶ The Sub-Millimeter Radio Telescope, **197.0** hours
→ project IDs: *Yan-2016A, 2017B.*

Accepted Observation Proposals as Co-I

▶ The Atacama Large Millimeter/submillimeter Array (ALMA)
→ project IDs: *2025.1.00810.S* (PI: Hideko Nomura), *2025.1.00378.S* (PI: Kotaro Kohno), *2023.1.01576.S* (PI: Yan Gong), *2022.1.00629.S* (PI: Yuki Yoshimura), *2022.1.00026.S* (PI: Nanase Harada), *2021.1.01441.S* (PI: Yuki Yoshimura), *2021.1.00105.S* (PI: Nanase Harada)
▶ The IRAM 30-m Telescope
→ project IDs: *003-25, 015-25, 048-25, 102-24, 141-24, 055-24, 067-23, 068-23, 110-23, 112-23, 100-22, 138-22, 141-22, 056-22, 064-22, 079-22, 068-21, 128-20, 022-20, 045-19, 088-16, 013-16*
▶ The Karl G. Jansky Very Large Array
→ project IDs: *VLA/23A-309, VLA/23B-105, VLA/24A-198*
▶ The Green Bank Observatory
→ project IDs: *GBT22A-153*
▶ The 100-m Effelsberg Radio Telescope
→ project IDs: *32-24, 109-23, 81-23, 105-22, 90-22, 93-19, 86-19*

Presentations

★*Vibrationally excited ammonia in the high-mass star-forming regions.*
@ Science with the Atacama Pathfinder Experiment (APEX),
Schloss Ringberg, Germany (poster) January 2025
★*Direct measurements of carbon and sulfur isotope ratios in the Milky Way.*
@ Fractionation of isotopes in space II, Florence, Italy November 2024
★*Non-metastable ammonia masers in the high-mass star-forming regions.*
@ Heritage of SOFIA, University of Stuttgart, Germany (poster) April 2024
★*The isotopic abundance ratios of carbon and sulfur in the Milky Way and ammonia masers.*
@ Chongqing University, Chongqing, China (**invited**) October 2023
★*Ammonia masers in the Milky Way.*
@ Zhejiag Lab, Hangzhou, China (**invited**) September 2023
★*Carbon and sulfur isotope ratios in the Milky Way.*
@ Astrochemistry conference, XAO, Xinjiang, China August 2023
★*Carbon isotope ratios in the Milky Way.*
@ TMRT 10th anniversary, Shanghai, China (**invited**, online) November 2022
★*Ammonia masers in the Milky Way.*
@ MPIfR group meeting, Bonn, Germany September 2022
★*Discovery of ammonia (9,6) masers in Cep A and G34.26+0.15.*
@ 12th IMPRS conference, Bonn, Germany May 2022
★*Discovery of ammonia (9,6) masers in two high-mass star-forming regions.*
@ PoSTER 2022 (poster) May 2022
★*Direct measurements of carbon and sulfur isotope ratios in the Milky Way.*
@ 50th YERAC (poster) August 2021
★*C, N, O, S isotope ratios in the Milky Way.*
@ 8th IMPRS conference, Bonn, Germany July 2021
★*Carbon and Sulfur isotope ratios in our Galaxy and NGC 253.*
@ MPIfR group meeting, Bonn, Germany July 2020
★*A Systematic TMRT Observational Study of Galactic $^{12}C/^{13}C$ Ratios from Formaldehyde.*
@ 2019 Symposium on Molecular Cloud and Star Formation, Xinjiang, China July 2019

Experience

♡ Observation experience > **2000.0 hours** (on-site + remote) with the Effelsberg 100-m, the IRAM 30-m, the TMRT 65-m, the Arecibo 305-m, the ARO 12-m, and the SMT 10-m. 2016 – 2025
♡ Three week IRAM EMIR Pool observations April – July 2025
♡ 10th IRAM 30-meter School on Millimeter Astronomy November 15 – 23, 2021
♡ Two week IRAM EMIR Pool observations April – June, 2021
♡ The scientific writing workshop (online), Bonn, Germany June 8 – 11, 2020
♡ 2018 FAST Radio Astronomy Summer School July 8–13, 2018
♡ Teaching data reduction during Radio Astronomy Summer School at Shanghai Astronomical Observatory (SHAO) July, 2017
♡ 2016 Annual Meeting of the Chinese Astronomical Society November 01 – 03, 2016
♡ JCMT Data Reductions and Analysis Workshop at SHAO October 16, 2016
♡ 2015 Radio Astronomy Summer School at SHAO July 19 – 25, 2015

Professional References

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