Yaoting Yan (闫耀庭)

Max-Planck-Institut für Radioastronomie, Auf dem Hügel 69, 53121 Bonn, Germany

Homepage https://yaotingyan.github.io/

Telephone +86 13824465597; +49 015256043266

Email yyan@mpifr-bonn.mpg.de, s6yayann@uni-bonn.de, astrotingyan@gmail.com

Date of Birth 26 DECEMBER 1993

Gender MALE

Education

Ph.D. in Astronomy & Astrophysics, Max-Planck-Institut für Radioastronomie (MPIfR), Bonn, Germany, 2019–expected 2023
Supervisors: Dr. Christian Henkel, Prof. Dr. Karl M. Menten
Thesis: "The influence of stellar objects onto the interstellar medium: isotopic compositions and maser lines"
M.S. in Astronomy, Center for Astronomy, Guangzhou University, China, 2016–2019
Supervisor: Prof. Dr. Jiangshui Zhang
Thesis: "A Systematic TMRT Observational Study of Galactic $^{12}C/^{13}C$ Ratios from Formaldehyde"
B.S. in Optical Information Science and Technology, School of Physics and Electronic Engineering, Guangzhou University, China, 2012–2016

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
2018 Annual College scholarship
2017 Annual College scholarship
2016 Annual Graduate Student Entrance scholarship
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
2014 Annual College scholarship
2014 Outstanding Student Leader
2013 Annual College scholarship
2013 Outstanding Student Leader

Refereeing Duty since September 2023, The Astrophysical Journal

PUBLICATIONS

In total: 15 refereed papers and 1 non-refereed paper.

(first-author: total four refereed papers)

1. Direct measurements of carbon and sulfur isotope ratios in the Milky Way
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.; 2023, A&A, 670, A98

2. Discovery of non-metastable ammonia masers in Sagittarius B2
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.; 2022, A&A, 666, L15

3. Discovery of ammonia (9,6) masers in two high-mass star-forming regions
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.; 2022, A&A, 659, A5

4. A Systematic TMRT Observational Study of Galactic $^{12}C/^{13}C$ Ratios from Formaldehyde
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.; 2019, ApJ, 877, 154

(co-author: 11 refereed papers and 1 non-refereed paper.)

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

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

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

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

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

6. Cyanopolyyne line survey towards high-mass star-forming regions with TMRT
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.; 2022, A&A, 663, A177

7. Interstellar Nitrogen Isotope Ratios: New NH_3 Data from the Galactic Center out to the Perseus Arm
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.; 2021, ApJS, 257, 39

8. ALCHEMI: an ALMA Comprehensive High-resolution Extragalactic Molecular Inventory. Survey presentation and first results from the ACA array
Martín, S.; Mangum, J. G.; Harada, N.; Costagliola, F.; Sakamoto, K.; Muller, S.; Al-

adro, 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.**; 2021, A&A, 656, A46

9. Studying infall in infrared dark clouds with multiple HCO^+ transitions
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.; 2021, RAA, 21, 208

10. Galactic Interstellar Sulfur Isotopes: A Radial $^{32}S/^{34}S$ Gradient?
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.; 2020, ApJ, 899, 145

11. 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
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.; 2020, ApJS, 249, 6

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

Accepted Observation Proposals as PI

(1690.0 hours)

The 100-m Effelsberg Radio Telescope

1. *Probing Kinetic Temperatures towards a sample of Nearby IRDCs*
10.3 Hours (ID: 68-22) 2022
2. *Monitoring ammonia maser emissions in the Milky Way*
35.0 Hours (ID: 30-22) 2022
3. *A global survey on K-band in high-mass star-forming regions*
70.0 Hours (ID: 34-22) 2022
4. *Silicon isotope ratios in the Milky Way*
38.0 Hours (ID: 91-20) 2020
5. *Confirmation of new ammonia masers in three star-forming regions*
5.0 Hours (ID: 13-20) 2020

The Karl G. Jansky Very Large Array

1. *Widespread Ammonia Masers in Sgr B2*
1.5 Hours (ID: VLA/22A-106) 2022
2. *Imaging the Newly Discovered Ammonia (9,6) Masers*
1.0 Hours (ID: VLA/21A-157) 2020

The IRAM 30m Telescope

1. *Mapping Gas Assembly in Nearby IRDCs*
   8.2 Hours (ID: 063-22) 2022
2. *Silicon isotope ratios in the Milky Way*
   56.0 Hours (ID: 031-21) 2021
3. *Sulfur chemistry and isotopic ratios in the Milky Way*
   48.0 Hours (ID: 033-21) 2021
4. *Measurements of the gradients of isotope ratios $^{12}C/^{13}C$ and $^{14}N/^{15}N$ in our Galaxy from CN*
   74.0 Hours (ID: 004-20, 125-20) 2020
5. *3mm spectroscopic mapping toward W49A*
   66.0 Hours (ID: 117-20, 047-21) 2020, 2021

NASA/JPL Deep Space Network DSS-43 70-m Telescope

1. *A global survey on K-band in high-mass star-forming regions*
   45.0 Hours 2022

The ARO 12 Meter Telescope

1. *Isotope ratio $^{12}C/^{13}C$ in Galactic molecular clouds*
   298.0 Hours 2018B, 2019A
2. *Isotope ratio $^{18}O/^{17}O$ in Galactic molecular clouds*
   172.0 Hours 2016B, 2017B

The James Clerk Maxwell Telescope

1. *Isotope ratio $^{18}O/^{17}O$ in Galactic molecular clouds*
   165.0 Hours (ID: M16BP037, M16XP019, M19AP021) 2016B, 2016X, 2019A

The Shanghai Tianma 65m Radio Telescope

1. *Isotope ratio $^{12}C/^{13}C$ in Galactic molecular clouds*
   400 Hours. 2016-2019
   Yan et al. ApJ, 2019, 877(2): 154.

The Sub-Millimeter Radio Telescope

1. *Oxygen isotope ratio of $^{18}O/^{17}O$ in molecular clouds with different Galactocentric distance*
   197.0 Hours 2016A, 2017B

Presentations

Ammonia masers in the Milky Way.
-Zhejiag Lab, Hangzhou, China — 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

Formaldehyde observations with TMRT.
-11th Jing-Guang-Xia Astrophysics Meeting, Guangzhou, China — November 2017

Experience

Observation experience > 2000.0 hours (on-site + remote) with the Effelsberg 100-m, IRAM-30m, TMRT-65m, Arecibo-305m, ARO-12m, and SMT-10m. **2016 - 2023**

Teaching data reduction in Radio Astronomy Summer School at Shanghai Astronomical Observatory **July 9-July 14, 2017**

10th IRAM 30-meter School on Millimeter Astronomy
– November 15-19, 22 and 23 2021

Two weeks IRAM EMIR Pool observations (**volunteer**)
– April 06 - April 13, May 25 - June 01 2021

The scientific writing workshop (online), Bonn, Germany — June 8-June 11, 2020

2018 FAST Radio Astronomy Summer School — July 8-July 13, 2018

2016 Annual Meeting of the Chinese Astronomical Society — Nov. 1-Nov. 3 2016

James Clerk Maxwell Telescope (JCMT) Data Reductions and Analysis Workshop

at Shanghai Astronomical Observatory Oct. 16, 2016

2015 Radio Astronomy Summer School at Shanghai Astronomical Observatory July 19-July 25, 2015

Professional References

Dr. Christian Henkel
Staff of Department Millimeter and Submillimeter Astronomy
Max-Planck-Institut für Radioastronomie
D-53121 Bonn, Germany
Phone:(0049)228 525 305
chenkel@mpifr-bonn.mpg.de

Dr. Al Wootten
ALMA-NRAO Deputy Project Scientist
National Radio Astronomy Observatory
Charlottesville VA 22903, USA
Phone:(001)434 296 0329
awootten@nrao.edu

Dr. Thomas L. Wilson
Staff of Department Millimeter and Submillimeter Astronomy
Max-Planck-Institut für Radioastronomie
D-53121 Bonn, Germany
Phone:(0049)228 525 303
thomaswilson1b@gmail.com