

DINGSHAN DENG

Lunar and Planetary Laboratory, The University of Arizona
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EDUCATION

University of Arizona

Ph.D. in Planetary Sciences

Supervisors: Prof. Ilaria Pascucci and Dr. Uma Gorti

Tucson, USA

2021 - Present

Beijing Normal University

B.S. in Astronomy

Beijing, China

2016 - 2020

RESEARCH INTERESTS

Star and Planet Formation; Protoplanetary Disks; Interstellar and Circumstellar Gas and Dust.

PUBLICATIONS

See the full publication list on [ADS](#)

ORCID ID: [0000-0003-0777-7392](#)

Total Publications: 22, with citations of 201 (Sept. 2025)

As First Author:

*) **Deng, D.**, Gorti, U., and Pascucci, I., and Ruaud, M. (submitted), DiskMINT: Self-Consistent Thermochemical Disk Models with Radially Varying Gas and Dust – Application to the Massive, CO-Rich Disk of IM Lup. *Submitted to The Astrophysical Journal*. Under review.

1) **Deng, D.**, Vioque, M., Pascucci, I., et al., (2025), The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO). III. Dust and Gas Disk Properties in the Lupus Star-forming Region, *The Astrophysical Journal*, vol. 989, no. 1.

2) **Deng, D.**, Pascucci, I., Fernandes, Rachel, (2025), ysoisochrone: A Python package to estimate masses and ages for YSOs, *Journal of Open Source Software*, vol. 10, issue 106.

3) **Deng, D.**, Ruaud, M., Gorti, U., and Pascucci, I. (2023). DiskMINT: A Tool to Estimate Disk Masses with CO Isotopologues. *The Astrophysical Journal*, vol. 954, no. 2.

4) **Deng, D.**, Sun, Y., Wang, T., Wang, Y., and Jiang, B. (2022). Infrared Excess of a Large OB Star Sample, *The Astrophysical Journal*, vol. 935, no. 2.

5) **Deng, D.**, Sun, Y., Jian, M., Jiang, B., and Yuan, H. (2020). Intrinsic Color Indices of Early-type Dwarf Stars, *The Astronomical Journal*, vol. 159, no. 5.

As Significant Contributor:

6) Xie, C., Pascucci, I., **Deng, D.**, et al., (2025), JWST Captures a Sudden Stellar Outburst and Inner Disk Wall Destruction, *The Astrophysical Journal*, vol. 978, no. 1.

7) Pascucci, I., Skinner, B., **Deng, D.**, et al. (2023). Large Myr-old Disks Are Not Severely Depleted of Gas-phase CO or Carbon, *The Astrophysical Journal*, vol. 953, no. 2.

8) Huang, Q., Jiang, B., **Deng, D.**, Yu, B., and Zijlstra, A. (2023). Estimation of the Flux at 1450 MHz of OB Stars for FAST and SKA, *The Astronomical Journal*, vol. 166, no. 1.

9) Yuan, H., **Deng, D.**, and Sun, Y. (2021). A star-based method for precise wavelength calibration of the Chinese Space Station Telescope (CSST) slitless spectroscopic survey, *Research in Astronomy and Astrophysics*, vol. 21, no. 3.

10) Sun, Y., **Deng, D.**, and Yuan, H. (2021). Precision of the Chinese Space Station Telescope (CSST)

stellar radial velocities, *Research in Astronomy and Astrophysics*, vol. 21, no. 4.

Other Co-author Publications:

- 11) Miley, J, et al. including **Deng, D.**, (2025). The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO). XII. Extreme Millimeter Variability Detected in a Class II Disk, *The Astrophysical Journal*, vol. 989, no. 1.
- 12) Vioque, M, et al. including **Deng, D.**, (2025). The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO). X. Dust Substructures, Disk Geometries, and Dust-disk Radii, *The Astrophysical Journal*, vol. 989, no. 1.
- 13) Anania, R, et al. including **Deng, D.**, (2025). The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO). VIII. The Impact of External Photoevaporation on Disk Masses and Radii in Upper Scorpius, *The Astrophysical Journal*, vol. 989, no. 1.
- 14) Tabone, B, et al. including **Deng, D.**, (2025). The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO). VII. Testing Accretion Mechanisms from Disk Population Synthesis, *The Astrophysical Journal*, vol. 989, no. 1.
- 15) Kurtovic, N, et al. including **Deng, D.**, (2025). The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO). VI. Comparison of Dust Evolution Models to AGE-PRO Observations, *The Astrophysical Journal*, vol. 989, no. 1.
- 16) Trapman, L., et al. including **Deng, D.**, (2025). The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO). V. Protoplanetary Gas Disk Masses, *The Astrophysical Journal*, vol. 989, no. 1.
- 17) Agurto-Gangas, C., et al., including **Deng, D.** (2025). The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO). IV. Dust and Gas Disk Properties in the Upper Scorpius Star-forming Region, *The Astrophysical Journal*, vol. 989, no. 1.
- 18) Ruiz-Rodriguez, D. A., including **Deng, D.**, (2025). The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO). II. Dust and Gas Disk Properties in the Ophiuchus Star-forming Region, *The Astrophysical Journal*, vol. 989, no. 1.
- 19) Zhang, K., et al. including **Deng, D.**, (2025). The ALMA Survey of Gas Evolution of PROtoplanetary Disks (AGE-PRO). I. Program Overview and Summary of First Results, *The Astrophysical Journal*, vol. 989, no. 1.
- 20) Sierra, A., et al. including **Deng, D.**, (2024). Hints of Planet Formation Signatures in a Large-cavity Disk Studied in the AGE-PRO ALMA Large Program, *The Astrophysical Journal*, vol. 974, no. 1.
- 21) Sellek, A. D., et al. including **Deng, D.**, (2024). Modeling JWST MIRI-MRS Observations of T Cha: Mid-IR Noble Gas Emission Tracing a Dense Disk Wind, *The Astronomical Journal*, vol. 167, no. 5.
- 22) Bajaj, N. S., et al. including **Deng, D.**, (2024). JWST MIRI MRS Observations of T Cha: Discovery of a Spatially Resolved Disk Wind, *The Astronomical Journal*, vol. 167, no. 3.

PUBLISHED SOFTWARE

Software Homepage  <https://github.com/DingshanDeng>

► **DiskMINT**: Disk Model for INdividual Targets

An open-source Python-Fortran code to build self-consistent thermochemical disk models.

GitHub repository: <https://github.com/DingshanDeng/DiskMINT>

► **ysoisochrone**: an open-source Python package that handles the isochrones for young stellar objects.

GitHub repository: <https://github.com/DingshanDeng/ysoisochrone>

OBSERVING PROPOSALS

ALMA Cycle 12 Large Program (DMOST)	2025.1.00324.L (104.5 h)	co-I
ALMA Cycle 8 Large Program (AGE-PRO)	2021.1.00128.L (103.4 h)	co-I & delegee
ALMA Cycle 12	2025.1.00921.S (15.2 h)	co-I
ALMA Cycle 12	2025.1.00246.S (26.0 h)	co-I
ALMA Cycle 11	2024.1.01402.S (36.5 h)	co-I
ALMA Cycle 10	2023.1.01100.S (10.2 h)	co-I
JWST Cycle 4	GO 8328 (6.6 h)	co-I

PRESENTATIONS

- Oral Presentation at the *The Solar System in Context*, Tucson, Arizona, USA. 2025
- Poster Presentation at the *Origins of Solar Systems Gordon Research Conference*, South Hadley, Massachusetts, USA. 2025
- Oral Presentations at the *Origins Seminar*, Tucson, Arizona, USA. 2025
 - Online recordings:
 - CO line emission supports large protoplanetary disk masses w/o much CO depletion
<https://www.youtube.com/watch?v=qxE-9GC9w0o>
 - Introducing ysoisochrone: A Python package that handles the isochrones for young stellar objects
<https://www.youtube.com/watch?v=0ydPsf9QDM&t=21s>
- Oral Presentation at the *From Star to Planet Formation*, Como, Italy. 2024
- Invited Talk at the *ESO Star and Planet Formation Seminar*, Munich, Germany. 2023
- Oral Presentation at the *DPS-EPSC 2023*, San Antonio, Texas, USA. 2023
- Oral Presentation at the *Alien Earth All-Hands Meeting*, Tucson, Arizona, USA. 2023
- Poster Presentation at the *Protostars and Planets VII*, Kyoto, Japan. 2023
- Oral Presentation and Visiting Student at *Dharma Planet Survey Project* at University of Florida, Gainesville, Florida, USA. 2019
- Oral Presentation at the *Seminar on Star Week*, Shijiazhuang, China. 2019
- Poster Presentation at the *Seminar on Interstellar Physics and Chemistry*, Kunming, China. 2018
- Poster Presentation at the *Seminar on Stars, Supernovas, and Interstellar Dust*, Beijing, China. 2018

SERVICES AND OUTREACH

- Origins Seminars Organizer 2024-present
 - Website: <https://alienearts.space/origins-seminar/>
- Lunar and Planetary Laboratory Conference Organizer 2023-present
- Referee for AAS Journals. 2023-present
- Arizona Pima County K-12 Teacher's workshop on radio waves Organizer 2025
- The Art of Planetary Sciences Organizer 2024
- Teaching assistance in the online class *Alien Earths* at the University of Arizona. 2024
 - Instructor: Prof. Jessica Barnes.
- Undergraduate student mentor at Beijing Normal University. 2020-2023
 - Mentee Huang, Q., with one first-author paper published in *The Astronomical Journal*.
- Participation in the production of a Massive Open Online Course on *Numerical Methods* at Beijing Normal University. 2018
 - Instructor: Prof. Li Chen.
- Volunteer at Beijing Astronomy Planetarium. 2017-2019

HONORS

- Galileo Circle Scholarship. The University of Arizona. *2024*
- Outstanding Undergraduate. Beijing Normal University. *2017, 2018, 2019*
- Excellent Research Project for Undergraduates. Beijing Normal University. *2019*
- *Jingshi* First Prize Scholarship for Excellent Academic Performance. Beijing Normal University. *2018*
- *Kuangqiao* Scholarship for Excellent Academic Performance. Beijing Normal University. *2017*

SKILLS

Programming: Python, Fortran, MATLAB, IDL

Software: CASA, TOPCAT, LATEX, EXCEL

Language: English, Chiense