

# Xinting Yu

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## Education

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<b>Johns Hopkins University</b> <i>Candidate of PhD in Planetary Sciences</i>	<b>Baltimore, MD, USA</b> <i>2014–Present</i>
<b>University of Science and Technology of China</b> <i>BS in Space Physics with honors</i>	<b>Hefei, Anhui, China</b> <i>2010–2014</i>

## Research Experience

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<b>University of California, Santa Cruz</b> <i>51 Pegasi b Postdoctoral Fellow (Supervisor: Xi Zhang)</i> Laboratory production of exoplanet aerosol analogs ("tholins"), material property characterization, exoplanet microphysics modeling	<b>Santa Cruz, CA</b> <i>Starting July, 2019</i>
<b>Johns Hopkins University</b> <i>Graduate Research Assistant (Advisor: Sarah Hörst)</i> Laboratory production of Titan aerosol analogs ("tholins"), material characterization (interparticle forces and mechanical properties), study the origin and evolution of aeolian process on Titan	<b>Baltimore, MD</b> <i>2014–Present</i>
<b>NASA Ames Research Center</b> <i>Visiting Student (Collaborators: Nathan Bridges, Devon Burr, James Smith)</i> Study aeolian processes on Titan using Titan Wind Tunnel	<b>Mountain View, CA</b> <i>2015 &amp; 2016 Summer</i>
<b>Key Laboratory of Solar Activity, National Astronomical Observatories</b> <i>Undergraduate Research Assistant (Advisor: Jun Zhang)</i> Investigation of cyclones in the Sun using data from SDO/AIA and HMI	<b>Beijing, China</b> <i>2013–2014</i>

## Honors and Awards

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- 51 Pegasi b Postdoctoral Fellowship, University of California, Santa Cruz
- JHU EPS Journal Club Long Presentation Award (\$2,000), 2018
- 50th DPS Hartmann Travel Grant (\$500), 2018
- Stephen E. Dwornik Award at the 49th Lunar and Planetary Science Conference – Best Graduate Oral Presentation, 2018
- Johns Hopkins University 2018-19 Technology Fellowship (\$5,000)
- Johns Hopkins University 2018-19 Dean's Teaching Fellow
- Titan Surface Meeting travel grant, 2018
- Johns Hopkins University J. Brien Key Fund (\$500), 2017
- Women in Astronomy IV travel grant, 2017

- Johns Hopkins University Shark Tank Education Innovation Competition (\$3,000), Winner, 2016
- Johns Hopkins University Owen Scholars Award (\$6,000/yr, 3yrs), 2014
- University of Science and Technology of China (USTC), Outstanding Bachelor Thesis, 2014
- USTC, Outstanding Award in Undergraduate Research Program, 2013
- USTC Outstanding Student Scholarship (Grade 1), 2013
- USTC Outstanding Student Scholarship (Grade 2), 2012
- USTC Outstanding Student Scholarship (Grade 3), 2011

## Teaching Experience

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Instructor.....

**Johns Hopkins University** **Baltimore, MD**  
*AS.270.328 Planetary Exploration: Techniques and Data Analysis (New Course)* *Fall 2018*

Teaching Assistant and Guest Lecturer.....

**Johns Hopkins University** **Baltimore, MD**  
*Teaching Assistant AS.270.114 Guided Tour of the Planets* *Spring 2019*  
*Guest Lecturer (1 lecture) AS.270.335 Planets, Life and the Universe* *Fall 2018*  
*Guest Lecturer (1 lecture) AS.270.114 Guided Tour of the Planets* *Spring 2018*  
*Teaching Assistant AS.270.335 Planets, Life and the Universe* *Fall 2017*  
*Guest Lecturer (1 lecture) AS.270.410 Planetary Surface Processes* *Fall 2017*  
*Teaching Assistant AS.270.114 Guided Tour of the Planets* *Spring 2017*  
*Guest Lecturer (1 lecture) AS.270.366 Spacecraft Instrumentation Project* *Spring 2017*  
*Guest Lecturer (1 lecture) AS.270.114 Guided Tour of the Planets* *Spring 2017*  
*Restructure AS.270.114 Guided Tour for Shark Tank Education Innovation Competition* *Winter 2017*  
*Teaching Assistant AS.270.103 Introduction to Global Environmental Change* *Fall 2016*  
*Guest Lecturer (1 lecture) AS.270.114 Guided Tour of the Planets* *Spring 2016*  
*Teaching Assistant AS.270.114 Guided Tour of the Planets* *Spring 2016*

## Additional Training

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- EON-ELSI Winter School in Earth–Life Science *Winter 2018*
- JHU Teaching Academy–Teaching Institute Certificate Program *Summer 2016*

## Referred Publications

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[7]: **Xinting Yu**, Sarah M. Hörst, Chao He, Bryan Crawford, and Patricia McGuiggan, "Where does Titan Sand Come From: Insight from Mechanical Properties of Titan Organic Analogs", *Journal of Geophysical Research - Planets*, 123, 2310-2321, <https://doi.org/10.1029/2018JE005651>, 2018. **(Featured article in *JGR-planets* and article on *Universe Today*: link)**

[6]: Chao He, Sarah M. Hörst, Nikole K. Lewis, **Xinting Yu**, Julianne I. Moses, Eliza M.-R. Kempton, Mark S. Marley, Patricia McGuiggan, Caroline V. Morley, Jeff A. Valenti, and Véronique Vuitton, "Photochemical Haze Formation in the Atmospheres of Super-Earths and Mini-Neptunes", *The Astronomical Journal*, 156, 1, <https://doi.org/10.3847/1538-3881/aac883>, 2018.

- [5]: Chao He, Sarah M. Hörst, Nikole K. Lewis, **Xinting Yu**, Julianne I. Moses, Eliza M.-R. Kempton, Patricia McGuiggan, Caroline V. Morley, Jeff A. Valenti, and Véronique Vuitton, "Laboratory Simulations on Haze Formation in Cool Exoplanet Atmospheres: Particle Color and Size Distribution", *Astrophysical Journal Letters*, 865(1), L3, <https://doi.org/10.3847/2041-8213/aab42b>, 2018.
- [4]: **Xinting Yu**, Sarah M. Hörst, Chao He, Patricia McGuiggan, and Nathan T. Bridges, "Direct Measurement of Interparticle Forces of Titan Aerosol Analogs ("Tholin") Using Atomic Force Microscopy", *Journal of Geophysical Research - Planets*, 122(12), 2610-2622, doi:10.1002/2017JE005437, 2017.
- [3]: **Xinting Yu**, Sarah M. Hörst, Chao He, Nathan T. Bridges, Devon M. Burr, Joshua A. Sebree, and James K. Smith, "The Effect of Adsorbed Liquid and Material Density on Saltation Threshold: Insight from Laboratory and Wind Tunnel Experiments", *Icarus*, 297, 97-109, doi:10.1016/j.icarus.2017.06.034, 2017.
- [2]: **Xin-Ting Yu**, Jun Zhang, Ting Li, and Shu-Hong Yang, "Case Studies of EUV Cyclones and Their Associated Magnetic Fields", *Res. Astron. and Astrophys.*, 15, 1525, doi.org/10.1088/1674-4527/15/9/009, 2015.
- [1]: **Xinting Yu**, Jun Zhang, Ting Li, Yuzong Zhang, and Shuhong Yang, "Homologous Cyclones in the Quiet Sun", *Astrophysical Journal Letters*, 782(2), L15, doi.org/10.1088/2041-8205/782/2/L15, 2014.

## Conference Proceedings

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- [12]: **Yu X.**, Hörst S.M., He C., McGuiggan P., and Crawford B., Interpreting Sand Formation on Titan: Insight from Interparticle Forces and Mechanical Properties of Titan Organic Analogs, *DPS*, 203.07D, 2018.
- [11]: **Yu X.**, Hörst S.M., He C., McGuiggan P., and Crawford B., Where Does Titan Sand Come From: Insight from Interparticle Forces and Mechanical Properties of Titan Organic Analogs, *Titan Surface Meeting*, 2018.
- [10]: **Yu X.**, Hörst S.M., He C., Crawford B., and McGuiggan P., Where Does Titan Sand Come From: Insight from Mechanical Properties of Titan Organic Analogs, *LPSC*, 1786, 2018, **Stephen E. Dwornik Award–Best Graduate Oral Presentation.**
- [9]: Radebaugh, J., Barnes, J. W., Mackenzie S., Hörst S. M., **Yu X.**, Lorenz, R. D., ... Bishop, B., The importance of Sand for Understanding Dune Processes and Surface Conditions of Titan, *LPSC*, 2083, 2018.
- [8]: **Yu X.**, Hörst S.M., He C., McGuiggan P., and Bridges N.T., Direct Measurements of Surface Energy, Elastic Modulus and Interparticle Forces of Titan Aerosol Analog ("Tholin") Using Atomic Force Microscopy, *AGU fall meeting*, 221907, 2017.
- [7]: He C., Hörst S.M., Lewis, N., **Yu X.**, McGuiggan P., and Moses J.I., Laboratory Simulations on Haze Formation in Cool Exoplanet Atmospheres, *DPS*, 300.01, 2017.
- [6]: **Yu X.**, Hörst S.M., He C., McGuiggan P., and Bridges N.T., Direct Measurement of Interparticle Adhesion of Titan Aerosol Analogs ("Tholin") Using Atomic Force Microscopy, *5th International Dune Workshop*, 3048, 2017.

[5]: Stephen L.F. Sutton, Devon M. Burr, Nathan T. Bridges, James K. Smith, Sarah M. Hörst, **Xinting Yu**, Jasper F. Kok, Francis A. Turney, J.R. Marshall, and D.A. Williams, The Titan Wind Tunnel in the NASA Planetary Aeolian Laboratory: Facility Improvements, *LPSC*, 1964, 2017.

[4]: **Xinting Yu**, Sarah M. Hörst, Chao He, Nathan T. Bridges, Devon M. Burr, and Joshua A. Sebree, Quantifying Water Content and Equilibration Properties of Wind Tunnel Materials, *DPS-EPSC*, 425.03, 2016.

[3]: Devon M. Burr, Emily Nield, Joshua Emery, Nathan T. Bridges, James K. Smith, John Marshall, Jasper Kok, **Xinting Yu**, and Sarah M. Hörst, Experimental (wind tunnel) investigations into aeolian entrainment: application to extraterrestrial environments, *32nd IAS International Meeting of Sedimentology*, 2016.

[2]: **Xinting Yu**, Sarah M. Hörst, Chao He, Nathan T. Bridges, and Devon M. Burr, Quantifying Density, Water Adsorption and Equilibration Timescale of Wind Tunnel Materials, *LPSC*, 2683, 2016.

[1]: NT Bridges, DM Burr, J Marshall, JK Smith, SM Hörst, E Nield, and X Yu, New Titan Saltation Threshold Experiments: Investigating Current and Past Climates, *AGU*, P12B-05, 2015.

## Skills

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**Language:** Chinese (native), English (fluent), Japanese and Spanish (conversational)

**Programming:** Matlab, IDL, C++, Fortran, Python, Mathematica

**Computer:** Windows, Linux, Mac OS, MS Office, LaTeX

**Laboratory Instruments:** RGA-MS, SEM, EDS, AFM, Nanoindenter, Pycnometer

**Laboratory Skills:** Vacuum Techniques, Photochemistry Synthesis, Low/High Temperature and Low-Pressure Gas Reactions

## Invited Seminars and Colloquia

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o University of California, Santa Cruz, Earth and Planetary Sciences *Spring 2019*

## Outreach

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o 50th LPSC microblogger *Spring 2019*

o 49th LPSC microblogger *Spring 2018*

o 15th Annual Physics Fair organizer, Johns Hopkins University *Spring 2018*

## Professional Affiliations

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o Division for Planetary Sciences of the American Astronomical Society

o American Geophysical Union

## Other Experiences

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o Active Animal Interpretation Volunteer in the Maryland Zoo in Baltimore since Fall 2017

o Active Animal Handling Volunteer in the Maryland Zoo in Baltimore since Summer 2017

- Yelp Elite Member since 2017, Review of the Day (ROTD) winner
- Active Education Volunteer in the Maryland Zoo in Baltimore since Fall 2016
- Volunteer Translator (adding English subtitles and translate English to Chinese) for Educational Videos, Youzimu Subtitle Team, 2016–2017
- Completed my 9th Full Marathon in 2016 Chicago
- Completed Full Marathon in 2015 Honolulu, 2015 Philadelphia, 2015 Marine Corps
- Women's 3rd place, IFC Anhui Stair Climb Competition, 2014 Hefei
- Completed Full Marathon 2014 Baltimore, 2014 Honolulu
- Completed Full Marathon in 2013 Beijing, 2013 Shanghai, 2014 Xiamen
- Completing Half Marathon in 2015 Xiamen, 2014 Kangbao, 2013 Yangzhou, 2012 Yangzhou, 2012 Beijing