

Last updated 22 September 2022

Michael J. Radke

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EDUCATION

Ph.D.	Johns Hopkins University, Baltimore, MD	Expected 2023
M.A.	Johns Hopkins University, Baltimore, MD Earth and Planetary Sciences, Owen Scholars Fellow Advisor: Sarah M. Hörst, Ph.D.	2018
B.S.	Case Western Reserve University, Cleveland, OH Geological Sciences, <i>cum laude</i> Advisors: Nathan S. Jacobson, Ph.D. – NASA Glenn Research Center Ralph P. Harvey, Ph.D. – Case Western Reserve University Thesis: <i>Simulation of Molecular Flow in a Mass Spectrometer Sampling System</i>	2016

RESEARCH EXPERIENCE

Johns Hopkins University	2016–Present
Laboratory photochemistry experiments of planetary atmospheres FTIR and UV-Vis spectroscopy of geologic and atmospheric materials Mass spectroscopic analysis of planetary atmospheres	
NASA Glenn Research Center	2015–2016
Laboratory studies of Venus surface-atmosphere chemistry Modelling of Knudsen cell mass spectrometer sampling system	

FIRST-AUTHOR PUBLICATIONS

Radke, M.J., Jacobson, N.S., and E.S. Copland. “Monte Carlo Simulation of a Knudsen Effusion Mass Spectrometer Sampling System.” *Rapid Communications in Mass Spectrometry*. 31(12), 1041–1046. 2017. <https://doi.org/10.1002/rcm.7873>

OTHER REFEREED PUBLICATIONS

Under Review:

Accepted for Publication:

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He, C., Serigano, J., Hörst, S.M., **Radke, M.J.**, and J. Sebree. “Titan Atmospheric Chemistry Revealed by Low-temperature N₂-CH₄ Plasma Discharge Experiments.” *ACS Earth and Space Chemistry*.

Published:

Serigano, J., Hörst, S.M, He, C., Gautier, T., Yelle, R., Koskinen, T., Trainer, M.G., and **M.J. Radke**. “Compositional Measurements of Saturn's Upper Atmosphere and Rings from Cassini INMS: An Extended Analysis of Measurements from Cassini's Grand Finale Orbits.” *Journal of Geophysical Research: Planets*. <https://doi.org/10.1029/2022JE007238>

Moran, S.E., Hörst, S.M, He, C., **Radke, M.J.**, Sebree, J., Izenberg, N., Vuitton, V., Flandinet, L., Orthous-Daunay, F., and C. Wolters. “Triton Haze Analogues: The Role of Carbon Monoxide in Haze Formation.” *Journal of Geophysical Research: Planets*. 127(1). 2022. <https://doi.org/10.1029/2021JE006984>

He, C., Hörst, S.M, **Radke, M.J.**, and M.H. Yant. “Optical Constants of a Titan Haze Analogue from 0.4 to 3.5 μm Determined Using Vacuum Spectroscopy.” *Planetary Science Journal*. 3(25). 2022. <https://doi.org/10.3847/PSJ/ac4793>

INVITED SEMINARS AND COLLOQUIA

VEXAG Second Planet Second Tuesdays (virtual) May 2022
Viewing the Vexatious Veil of Venus: A Veritable Variety of Very Vile Vapors

University of California, Santa Cruz, OWL Planetary Lunch. (virtual) Nov 2021
Phosphine on Venus? Perspectives from the Pioneer Probe

CONFERENCE PRESENTATIONS

Radke, M.J., Hörst, S.M., Serigano, J., He, C., and Trainer, M.G. “Reanalysis of the Pioneer Venus Large Probe Mass Spectrometer Data.” AGU Fall Meeting. New Orleans, LA. 2021.

Moran, S.E., Hörst, S.M., He, C., **Radke, M.J.**, Sebree, J., Izenberg, N., Vuitton, V., Flandinet, L., Orthous-Daunay, F-R., and C. Wolters. “Triton’s Haze Properties and the Role of Carbon Monoxide in Haze Formation from the Laboratory.” AGU Fall Meeting. New Orleans, LA. 2021.

Moran, S.E., Hörst, S.M., He, C., **Radke, M.J.**, Sebree, J., Izenberg, N., Vuitton, V., Flandinet, L., Orthous-Daunay, F-R., and C. Wolters. “Triton’s Haze Properties as Characterized in the Lab.” AGU Fall Meeting. San Francisco, CA. 2020.

Radke, M.J., Hörst, S.M., He, C., and M.H. Yant. “Optical properties of sulfuric acid.” Exoplanets in Our Backyard. Houston, TX. 2020.

Radke, M.J., Hörst, S.M., He, C., and M.H. Yant. “Optical properties of sulfuric acid.” VEXAG Meeting #17. Boulder, CO. 2019.

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Radke, M.J., Hörst, S.M., He, C., and M.H. Yant. “Optical properties of Venus aerosol analogues.” EPSC-DPS Joint Meeting. Geneva, Switzerland. 2019.

Radke, M.J., Hörst, S.M., He, C., and M.H. Yant. “Optical properties of Venus aerosol analogues.” International Venus Conference. Niseko, Japan. 2019.

Radke, M.J., Hörst, S.M., He, C., and M.H. Yant. “Laboratory investigations of Venus aerosol analogs.” DPS Meeting #50, Knoxville, TN. 2018.

Radke, M.J., Jacobson, N.S., and R.P. Harvey. “Monte Carlo Simulation of Molecular Flow in a Knudsen Effusion Mass Spectrometer.” CWRU Research ShowCASE. Cleveland, OH. 2016.

TEACHING EXPERIENCE

Johns Hopkins University

Guest Lecture – AS.270.129 – The Grandeur of You & The Universe	Spring 2022
Teaching Assistant – AS.271.114 – Guided Tour: The Planets	Spring 2021
Teaching Assistant – AS.360.339 – Planets, Life, and the Universe	Fall 2020
Teaching Assistant – AS.271.114 – Guided Tour: The Planets	Spring 2020
Teaching Assistant – AS.271.107 – Introduction to Sustainability	Spring 2019
Teaching Assistant – AS.270.125 – People and the Earth	Fall 2018

HONORS AND AWARDS

Future Investigators in NASA Earth and Space Science and Technology National Aeronautics and Space Administration \$90k total, two years	2021–2023
Owen Scholars Fellowship JHU Krieger School of Arts and Sciences \$18k total, three years	2016–2019
Camp Davis Field Geologist Award University of Michigan Department of Earth and Environmental Sciences	2016
Philip O. Banks Award for Outstanding Academic Achievement CWRU Department of Earth, Environmental, and Planetary Science	2016

KEY COURSEWORK

Johns Hopkins University

AS.270.630 – Physics and Chemistry of Aerosols

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AS.030.402 – Experimental Methods in Physical Chemistry

University of Michigan

EARTH 440/441 – Geology Field Course

Case Western Reserve University

CHEM 310 – Foundations of Analytical Chemistry

CHEM 304 – Quantitative Analysis Lab

CHEM 305 – Physical Chemistry Lab

PROFESSIONAL AFFILIATIONS

American Geophysical Union

American Astronomical Society

Division for Planetary Sciences of the American Astronomical Society

OUTREACH

Case Western Reserve University Geological Society

2014

Co-founder

PRESS

Room ([web](#))

Sep 2020