Lavender Elle Hanson

PhD student
Department of Earth & Planetary Science
Johns Hopkins University
Baltimore, MD

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Education

Ph.D., Earth and Planetary Science — 2020–2025 (expected)
Johns Hopkins Univ, Baltimore, MD
Advisor: Darryn D. Waugh

M.S., Atmospheric Science & Meteorology — 2013–2018
Penn State Univ, University Park, PA
Advisor: Jerry Y. Harrington

B.A., Physics & Chemistry — 2009–2013
Luther College, Decorah, IA

Research Experience

Modeling and image analysis of Titan ice clouds — 2020–2025
Johns Hopkins University
advised by Darryn D. Waugh

Laboratory spectroscopy of Titan cloud ices — 2020
NASA Goddard Space Flight Center/University of Maryland
advised by Carrie M. Anderson

Martian cloud and atmospheric dynamics using Mars Reconnaissance Orbiter imagery — 2019
NASA Goddard Space Flight Center/University of Maryland
advised by Scott Guzewich

Skills

Cloud microphysical theory and modeling

Planetary imagery analysis

Programming (primarily Python and Fortran 77–03)

Professional Society Membership

American Astronomical Society, Division of Planetary Science — 2023–present

American Geophysical Union — 2018–present

Teaching

Guided Tour: The Planets, TA — Spring 2023-24

Principles of Atmospheric Measurement, co-instructor — Spring 2017

Radiation and Climate, TA — Fall 2018

Atmospheric Thermodynamics, TA — Fall 2014

Other Training	Various JHU teaching workshops	2020–2025
	Johns Hopkins Teaching Institute, May 29-31	Spring 2024
	"Grading and Anti-grading" (workshop series)	Spring 2024
	"Teaching Discomfort: Facilitating Challenging Discussions in the Classroom" (workshop series)	Fall 2023
Service	Newsletter Editor and Contributor, EPS	2024–
	Social Committee organizer, EPS	2020–2024
	Johns Hopkins Trans Awareness Task Force	2023–2024
Funding	NASA FINESST: *Mixed-species clouds in Titan's polar stratosphere* (as future investigator, PI: Darryn Waugh).	2021–2024

Publications

1. **Lavender E Hanson**, Robert French, Darryn Waugh, Erika Barth, and Carrie M. Anderson, 2025: The Descent of Titan's South Polar Cloud, (submitted to *Geophys Res Lett*). preprint doi:10.22541/essoar.173152976.68313678/v1
2. **Lavender E Hanson**, Darryn Waugh, Erika Barth, and Carrie M. Anderson, 2023: Investigation of Titan's south polar HCN cloud during southern fall using microphysical modeling, *Planet Sci J*, 4, 237. doi:10.3847/PSJ/ad0837
3. Gwenore F Pokrifka, AM Moyle, **Lavender E Hanson**, and Jerry Y Harrington, 2020: Estimating Surface Attachment Kinetic and Growth Transition Influences on Vapor-Grown Ice Crystals, *J Atmos Sci*, 77, 2393. doi:10.1175/jas-d-19-0303.1
4. Jerry Y Harrington, Alfred Moyle, **Lavender E Hanson**, Hugh Morrison, 2019: On Calculating Deposition Coefficients and Aspect-Ratio Evolution in Approximate Models of Ice Crystal Vapor Growth, *J Atmos Sci*, 76, 1609. doi:10.1175/jas-d-18-0319.1
5. Alexander Harrison, Alfred M Moyle, **Hanson**, Jerry Y Harrington, 2016: Levitation diffusion chamber measurements of the mass growth of small ice crystals from vapor, *J Atmos Sci*, 73, 2743-2758. doi:10.1175/JAS-D-15-0234.1
6. EM Levin, R Hanus, **Hanson**, WE Straszheim, K Schmidt-Rohr, 2013: Thermoelectric properties of $Ag_2Sb_2Ge_{46-x}Dy_xTe_{50}$ alloys with high power factor, *Physica Status Solidi A*, 210, 2628-2637. doi:10.1002/pssa.201330217

Conference presentations

1. Lavender E Hanson, Darryn Waugh, Erika Barth, and Carrie Anderson. 2024: Observations and Modeling of Titan's Descending South Polar Cloud (poster). *AGU 2024*, P43D-3038, Washington, DC.
2. Lavender E Hanson, Darryn Waugh, Carrie Anderson, and Erika Barth. 2024: The Slow Descent of Titan's South Polar Cloud (talk). *AAS/DPS 2024*, 208.02, Boise, ID.
3. Lavender E Hanson, Darryn Waugh, Erika Barth, and Carrie M. Anderson. 2023: Investigating the evolution of Titan's high altitude south polar HCN cloud (talk). *AAS/DPS 2023*, 208.04, San Antonio, TX.
4. Lavender E Hanson, Darryn Waugh, Erika Barth, and Carrie M. Anderson. 2023: Modeling the fall high altitude south polar HCN cloud (talk). *Titan Through Time 6*, Paris.
5. Lavender E Hanson, Scott Guzewich, 2019: Orographic clouds in the Mars Arcadia province (poster). AGU *Fall Meeting 2019*, P41B-3405.
6. Lavender E Hanson, Scott Guzewich, 2019: Using Machine Learning to Identify Clouds in Mars Daily Global Maps (poster), *Ninth International Conference on Mars*, Pasadena, CA.
7. Hanson, Alfred Moyle, Jerry Harrington, 2016: Measurements of vapor growth and sublimation of individually levitated ice particles below -30°C (talk), *17th International Conference on Clouds & Precipitation*, Manchester, UK, S1.14.

Updated: December 25, 2024