

# Gillis Lowry

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## EDUCATION

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**Astronomy Bachelor of Arts, Cum Laude**, Cornell University      *Graduated May 2024*

- Minor in science communication.

*Relevant coursework:* Planetary Atmospheres, Planetary Image Processing, Exoplanets & Planetary Systems, Multiwavelength Astronomy, Symbolic & Numeric Computing (incl. linear algebra & differential equations)

## RESEARCH EXPERIENCE

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**Astronomy Research Assistant**, Cornell University      *September 2022 – Present*

- Submitted first-author paper to MNRAS with refined estimates of habitable zone planets using *Gaia* DR3 ([preprint available on NASA ADS](#)), with guidance of Prof. Lisa Kaltenegger, Director of Carl Sagan Institute. Creating outreach extension of this research ([prototype available here](#)).
- Analyzing TESS data for hot Jupiter transit timing variations (w/ Dr. Jake Turner) and probing chemical composition of exoplanet atmospheres via Bayesian model comparison and parameter estimation (w/ Dr. Ryan MacDonald).
- Nominated for Cranson and Edna B. Shelley Undergraduate Research Award.

## WORK EXPERIENCE

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**Science Communicator**      *March 2022 – Present*

Carl Sagan Institute, Cornell University

- Co-organized [Carl Sagan's 90th Birthday events](#) at Cornell for thousands of guests (in-person and online) w/ CSI Director Lisa Kaltenegger. Managed logistics and social media, conducted interviews, edited videos.

**Planetarium Facilitator**, Saint Louis Science Center      *August 2021 – January 2024*

- Presented my own live, 45-minute shows to upwards of 150 guests with a Zeiss Universarium projector.

**President and Outreach Coordinator**      *June 2022 – June 2024*

Cornell Astronomical Society, Fuertes Observatory

- Spearheaded a [successful day trip](#) to eclipse totality on April 8th, 2024—arranging buses, waivers, and supplies for over four hundred Cornell students. Promoted eclipse safety to local area via fliers, videos.
- Authorized to open observatory and operate telescopes for hundreds of weekly guests.
- Directed events such as lecture series, two Carl Sagan Nights, and [our telescope's 100th anniversary](#).
- Mentored newer members, guided monthly telescope training.
- Helped start monthly public newsletter—writing articles, advising other writers, editing each issue.
- Conducted ~monthly private tours (for Girl Scouts, high schoolers with educational disabilities, etc.).

**Publicity Lead**, Alpha CubeSat  
Space Systems Design Studio, Cornell University

*September 2021 – July 2024*

- Collaborated with Intrepid Sea, Air, and Space Museum staff to design temporary museum [exhibit](#).
- Produced videos about Alpha CubeSat—wrote and presented scripts, filmed most of my own footage, and edited the final product. Created [video](#) that played in the Intrepid exhibit.
- Oversaw the development of an [Alpha CubeSat website](#) and coordinated work of publicity team.

## AWARDS

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**Second Prize**, Griffith Observer Science Writing Contest

*July 2023*

- Placed second in the Joan and Arnold Seidel Griffith Observer Science Writing Contest for "[When Spaceships Pass in the Night: Exoplanets and the Search for Life](#)"—article published in Oct. 2023 issue.

**Dean's List**, College of Arts & Sciences, Cornell University

*August 2022 – May 2023*

## PUBLICATIONS

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- Bohl A.\*, Lawrence L.\*, **Lowry G.\***, Kaltenegger L. Probing the Limits of Habitability: A Catalog of Rocky Exoplanets in the Habitable Zone. **Submitted to MNRAS**. [Preprint available on NASA ADS](#).
- **Lowry G.\***, Kaltenegger L. Atmospheres of Known Earth-like Exoplanets Over Time. To be submitted to MNRAS.
- **Lowry G.\***, Turner J.D.\*, et al. Constraints on the orbital decay of several ultra-hot Jupiters. To be submitted to ApJ.
- Turner J.D., **Lowry G.**, et al. Updated ephemeris for all targets observed by JWST in Cycles 1-3. To be submitted to ApJ.
- Solano-Oropeza D., Turner J.D., **Lowry G.**, et al. Ultra-precise constraints on the orbital decay of WASP-12b from TESS. To be submitted to ApJ.
- Larsen S., Turner J.D., Solano-Oropeza D., **Lowry G.**, et al. Updated ephemeris for the super-Earth Pi Men c. To be submitted to ApJ.
- Flagg L. et al. (incl. **Lowry G.**). JWST observations of the warm ice giant GJ 3470b. To be submitted to ApJ.
- Meziani Y., Flagg L., Turner J.D., (incl. **Lowry G.**). Systematic bias of high-resolution atmospheric detections due to an incorrect ephemeris. To be submitted to ApJ.

## CONFERENCES

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- Lowry, G., Kaltenegger, L. Visualizing the Habitable Zone: A New Public-Facing Habitable Exoplanet Catalog, oral presentation at AAS Meeting #245, January 2025.
- Lowry, G., Kaltenegger, L. Visualizing the Habitable Zone: A New Public-Facing Habitable Exoplanet Catalog, poster presentation at Emerging Researchers in Exoplanet Science (ERES) Symposium IX, July 2024.

## PUBLIC PRESENTATIONS

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- Presenting Science to the Public, talk for students of the Cornell Astronomical Society, April 18, 2025.
- LGBTQ+ astronomers panel for Girl Scouts Beyond Program, October 18, 2024.
- Moderator of public [Audience Q&A with Ann Druyan](#) at Cornell Cinema, February 13, 2024.
- Carl Sagan's Birthday Night at Cornell Astronomical Society, public talk on his life and work, November 7, 2023.
- NASA Spaceflight Live: TINY SATS - NASA's CubeSat Launch Initiative and Beyond panel, June 25, 2023.
- Yuri's Night at Cornell Astronomical Society, public talk on human spaceflight, April 2022, 2023, 2024.

## PRESS

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### Outreach

- [Lunar eclipse spotting at Cornell: Here's how it looked and when to see the next one](#) - Ithaca Journal, March 2025
- [Cornell honors Sagan's 90th birthday with celebration of science](#) - Cornell Chronicle, Nov. 2024
- [Totality awesome: 400 students travel north for rare eclipse](#) - Cornell Chronicle, April 2024
- [Journey into darkness: Cornell Astronomical Society traveling to eclipse's path of totality](#) - Ithaca Journal, March 2024
- ['Cosmos' screening features ice cream and live Q&A with Ann Druyan](#) - Cornell Chronicle, Feb. 2024
- [Postcards from Earth: Hologram project showcased at Intrepid](#) - Cornell Chronicle, Feb. 2023
- [Crowd gathers to wish 'happy birthday' to Fuertes telescope](#) - Cornell Chronicle, Oct. 2022

### SKILLS

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**Coding Languages:** Python (incl. research & visualization), Matlab (incl. image processing), Mathematica (incl. linear algebra & differential equations)

**Programs:** POSEIDON atmospheric retrieval package, ArcGIS, Microsoft Office Suite, Adobe Photoshop, Adobe InDesign, Final Cut Pro X, Zeiss Universarium Mark IX star projector

### TELESCOPE OPERATION

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<b>Cornell Space Sciences Building Telescope</b> , (3.8-meter radio), Ithaca, NY	<i>One semester</i>
<b>James R. Houck Telescope</b> (25-inch optical reflector), Ithaca, NY	<i>One semester</i>
<b>Irving P. Church Telescope</b> (12-inch refractor), Fuertes Observatory, Ithaca, NY	<i>Ten semesters</i>