

## **Eric Anthony Comstock**

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ericanthonycomstock.com

**EDUCATION** **Georgia Institute of Technology**, Atlanta, GA  
PhD student (beginning January, 2023), Aerospace Engineering  
GPA: 3.7/4.0 (as of October, 2023)

**Texas A&M University**, College Station, TX  
B.S. Aerospace Engineering,  
Engineering Honors Program  
Magna Cum Laude  
Minors: Chemistry and Mathematics  
GPA: 3.885/4.0 December, 2022

**RESEARCH INTERESTS** Advanced Propulsion, Magnetohydrodynamics, Computational Fluid Dynamics, Simulations and Numerical Algorithm Development

**PROFESSIONAL SOCIETIES** American Physical Society  
Space Generation Advisory Council Commercial Space Project Group

### **EXPERIENCE**

**Graduate Research Assistant**  
**Georgia Institute of Technology, Atlanta, Georgia**  
**Low-Gravity Science and Technology Lab** January, 2023 – Present

- Use of analytical and computational methods to evaluate the effectiveness of the use of induced electric currents and magnetic fields to accelerate ambient plasma in orthogonal directions thus providing thrust

**Undergraduate Research Assistant**  
**Texas A&M University, College Station, Texas**  
**National Aerothermochemistry and Hypersonics Lab** September, 2022 – December, 2022

- Computational modeling and optical spectrum analysis of hypersonic flows

**Undergraduate Research Assistant**  
**Texas A&M University, College Station, Texas**  
**Laser Diagnostics and Plasma Devices Lab** January, 2022 – August, 2022

- Computational modeling and optical spectrum analysis of a laser and particle beam, incorporating low-density effects and the modeling of quantum absorption

**Teaching Assistant**  
**Texas A&M University, College Station, Texas**  
**Aerospace Engineering Department** January, 2021 – May, 2021

- Graded papers for a senior level class in Finite Difference and Finite Element Analysis (AERO 430)

**Undergraduate Research Assistant**  
**Texas A&M University, College Station, Texas** January, 2021 – May, 2021

- Created a simulation program in Python simulating rotational-vibrational spectra for use in hypersonic flow spectroscopy.

**Undergraduate Research Assistant**  
**Texas A&M University, College Station, Texas**  
**Michaudel Lab – Organic Chemistry** January, 2020 – May, 2020

- Organic chemistry research that resulted in a departmental paper entitled “Bottom-Up Synthesis of n-doped Polycyclic Aromatic Hydrocarbons.”

## JOURNAL ARTICLES

- Eric A. Comstock, A. Romero-Calvo, Hugh Chen, Tianyang Hu, “Spherical Magnetic Liquid Mirror Telescopes,” *in preparation*
- Eric A. Comstock, A. Romero-Calvo, “Propellantless Magnetohydrodynamic Deorbiting Systems,” *in preparation*

## CONFERENCE PAPERS AND PRESENTATIONS

- Eric A. Comstock, A. Romero-Calvo, “External Plasma-Breathing Magnetohydrodynamic Spacecraft Propulsion,” Oral Conference Presentation at the 65th Annual Meeting of the APS Division of Plasma Physics, Denver, Colorado, US, October 30 – November 3, 2023
- Eric A. Comstock, Christopher Limbach, “Methods of Low-Density Gas Simulation in the Context of Beamed Propulsion Techniques,” Poster at the Texas A&M University – College Station College of Engineering Undergraduate Summer Research Grant (USRG) Program, August 3, 2022

## HONORS AND AWARDS

- August, 2023 – APS Division of Plasma Physics Travel Grant – This is a selective grant awarded to students presenting their research at the October, 2023 APS DPP meeting. Preference is given to first authors.
- Fall, 2023 – Goizueta Foundation Fellowship at Georgia Tech – This is a renewable fellowship for up to 4 years. Fellowship recipients bring exemplary levels of scholarship and innovation to the academic departments that host their study and research.
- Graduated at 17 years of age from Texas A&M University – College Station, Magna Cum Laude (3.89/4.0 GPA), Bachelor of Science in Aerospace Engineering with Engineering Honors, and minors in chemistry and mathematics, December 2022
- Summer, 2022 – Undergraduate Summer Research Grant (USRG) at Texas A&M - College Station – This is a highly selective grant, open to STEM students from all over the country who plan to attend graduate school, funded by the Texas A&M – College Station College of Engineering.
- Dean’s Honor Award, Fall, 2022, Spring, 2022, Fall, 2021, Fall 2020, Texas A&M – College Station College of Engineering
- Engineering Honors Program, Texas A&M – College Station Aerospace Engineering Department
- Tau Beta Pi, National Engineering Honor Society, November, 2020
- National Chemistry Olympiad, Honors designation in 2018 and in 2019 (top 150 students nationwide)
- President, Chemistry Club, Lone Star College – Montgomery, 2017

## SKILLS

MATLAB, Maple, Python, C++, MS Office, Solidworks, General Mission Analysis Tool (GMAT), CFD, NEQAIR, Pointwise, US3D, OpenMDAO, SIMION 2020, Leadership experience, Finite Difference Method and Finite Element Analysis for hyperbolic and parabolic PDEs in arbitrary dimensional spaces, Rigid Body Dynamics, Runge-Kutta 4, Least Squares Method, Control Systems Analysis (Laplace transfer functions and state-space systems)

## RELEVANT COMPLETED COURSEWORK as of October, 2023

Aerothermochemistry, Numerical Methods of Partial Differential Equations, Computational Fluid Dynamics, Turbulent Flows, Optimization for Design of Engineered Systems, Space System Design, Chemical Equilibria, Nuclear Chemistry, Physical Chemistry, Complex Analysis