

Nicholas A Lombardo

PhD Candidate

Department of Earth and Planetary Science

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Education

M.Phil. Earth and Planetary Sciences	Yale University	2021
B.S. Physics	Central Connecticut State University	2017
B.A. Mathematics	Central Connecticut State University	2017
<i>Expected</i>		
<i>PhD Earth and Planetary Sciences</i>	<i>Yale University</i>	<i>2024</i>

Professional Experience

Teaching/Research Fellow	Yale University Dept. of Earth and Planetary Sciences	2019-present
Research Assistant	<i>Cassini</i> CIRS Instrument, UMBC at GSFC	2017-2019
Academic Mentor	Central Connecticut State University TRiO Office	2013-2016

Peer Reviewed Publications

1. Hewett, D., Bernath, P. F., Wong, A., Billingham, B. E., Zhao, J., **Lombardo, N. A.**, Nixon, C. A., Jennings, D. E. "N₂ and H₂ Broadened Isobutane Infrared Absorption Cross Sections and Butane Upper Limits on Titan," *Icarus*, **344**, 113460 (2020)
2. Nixon, C. A., Ansty, T. M., **Lombardo, N. A.**, Bjoraker, G. L., Achterberg, R. K., Annex, A. M., Rice, M., Romani, P. N., Jennings, D. E., Coustenis, A., Bezar, B., Vinatier, S., Lellouch, E., Teanby, N. A., Cottini, V., Flasar, F. M. "Cassini Composite Infrared Spectrometer Observations of Titan 2004-2017," *The Astrophysical Journal Supplement Series*, **244**, 14 (2019)
3. ***Lombardo, N. A.**, Nixon, C. A., Greathouse, T. K., Bezar, B., Jolly, A., Vinatier, S., Teanby, N. A., Richter, M. J., Irwin, P. J. G., Coustenis, A., Flasar, F. M. "Detection of Propadiene on Titan," *The Astrophysical Journal Letters*, **881**, L33 (2019) - **featured on Sci-News and NASA Astrobiology Institute homepage*
4. **Lombardo, N. A.**, Nixon, C. A., Sylvestre, M., Jennings, D. E., Teanby, N., Irwin, P. G. J., and Flasar, F. M. "Ethane in Titan's Stratosphere from Cassini CIRS Far- and Mid-Infrared Spectra," *The Astronomical Journal*, **157**, 160-170 (2019)
5. **Lombardo, N. A.**, Nixon, C. A., Achterberg, R. K., Sung, K., Jolly, A., Irwin, P. G. J., and Flasar, F. M. "Spatial and Seasonal Variations in C₃H_x Hydrocarbon Abundance in Titan's Stratosphere with Cassini CIRS Observations," *Icarus*, **317**, 454 – 469 (2019)

Ground Observing Experience

Assistant Observer, Texas Echelon Cross Echelle Spectrograph, NASA Infrared Telescope Facility, July 2018

Professional Service

2021 – present	Atm./Ocean/Climate student representative on Yale EPS Colloquium Committee
2019 – present	Peer reviewer for The Astronomical Journal, Yale Undergraduate Research Journal
2018 – present	Panelist (1x), secretary (1x), and external reviewer (2x) NASA ROSES review panels
2017	Poster Session Lead for the Titan Through Time IV Workshop
2014 – 2016	President of the CCSU Society of Physics Students

Invited Colloquia and Seminars

- 2020 Departmental Seminar, CCSU Dept. of Physics and Engineering Physics (postponed, COVID-19)
2019 Space Physics Research Seminar, University of Leicester Space Physics Group
2018 Retreat Presentation, Center for Research in Exploration and Space Science and Technology-II
2018 Departmental Seminar, CCSU Department of Geological Science

Graduate Teaching Experience

- Fall 2019 G&G 140 Introduction to Atmospheric, Ocean, and Climate Change

Conference and Workshop Talks

- 1 - **Lombardo, N. A.**, et al., "Detection of Allene on Titan," EPSC-DPS Joint Meeting (2019)
- 2 - **Lombardo, N. A.**, et al., "Detection of Allene on Titan," Hydrocarbon Worlds NAI Workshop (2019)
- 3 - **Lombardo, N. A.**, et al., "Using Far-Infrared Observations to Probe Ethane Abundance in Titan's Lower Stratosphere," American Astronomical Society, DPS meeting #50 (2018)
- 4 - **Lombardo, N. A.**, et al. "C₃H_X Hydrocarbon Abundance in Titan's Atmosphere from *Cassini* Infrared Spectra," 49th Lunar and Planetary Science Conference (2018)
- 5 - **Lombardo, N. A.**, et al. "Abundance Profiles for C₃ Hydrocarbons in Titan's Atmosphere," American Astronomical Society, DPS meeting #49 (2017)
- 6 - **Lombardo, N. A.**, et al., "Controllably Inducing and Modeling Optical Response from Graphene Oxide," APS March Meeting (2016)

Select Conference and Workshop Posters

- 1 - Steffens, B.S., et al. including **Lombardo, N.A.**, "The Search for n-Butane in Titan's Atmosphere Using IRTF/TEXES Data," Lunar and Planetary Science Conference (2021)
- 2 - **Lombardo, N. A.**, et al., "Detection of Allene in Titan's Atmosphere," Astrobiology Science Conference (2019)
- 3 - Hewett, D., et al., including **Lombardo, N. A.**, "Absorption Cross Sections of Isobutane and its Potential Presence in Titan's Atmosphere," 74th International Symposium on Molecular Spectroscopy (2019)
- 4 - **Lombardo, N. A.**, et al., "The Search for Allene in Titan's Stratosphere using Mid-IR Spectra from the TEXES Instrument on IRTF," American Geophysical Union, Fall Meeting (2018)
- 5 - **Lombardo, N. A.**, et al., "Comparison of Modeled Alkane Abundances in Titan's Atmosphere using Different Spectral Windows with *Cassini* CIRS spectra," Cassini Science Symposium (2018)
- 6 - **Lombardo, N. A.**, et al., "C₃ Hydrocarbon Abundance in Titan's Atmosphere with *Cassini* Infrared Spectra," American Astronomical Society, AAS Meeting #231 (2018)
- 7 - **Lombardo, N. A.**, et al., "A Sensitive Search for Allene in Titan's Atmosphere," Titan Through Time IV (2017)
- 8 - **Lombardo, N. A.**, et al., "Synthesis and Characterization of CoFe_{2-x}Ni_xO₄ Magnetic Nanoparticles," APS NES Spring (2016)
- 9 - **Lombardo, N. A.**, et al., "Origin of Photoluminescence in Graphene Oxide," APS NES Fall (2015)

Invited Public Panels

- 2014 22nd Annual Science and Technology Brain Trust, US News STEM Solutions Conference

Honors and Awards (bold indicates financial awards)

- 2019** Yale Geology and Geophysics Bateman Fellowship
- 2019** DPS Hartmann Travel Grant
- 2018 NASA Group Achievement Award – Cassini CIRS Investigation Team
- 2017 CCSU Physics and Engineering Physics Departmental Honors
- 2016 CCSU John Bulman Award for Service to the Department of Physics and Engineering Physics
- 2016** CCSU Faculty Student Research Grant
- 2016** CCSU Alumni Travel Grant
- 2013** CCSU-NSF Computer Science, Math, and Physics Scholarship (4 years)

Selected Outreach

- Overnight Near-to-Peer Mentor** to group of 5 high school students at the GSFC *Boys Night In* (2019)
- Volunteer and Exhibitor** representing the Cassini CIRS instrument team; *Celebrating Earth Day with NASA at Union Station* (2017-2019); *Science Jamboree* at GSFC (2017-2018); *Outer Space in the President's Place* in the Eisenhower Executive Office Building in Washington, DC (2017)
- Volunteer and Exhibitor** representing the Lunar Reconnaissance Orbiter (LRO) outreach team based at NASA GSFC; *International Observe the Moon Night* at GSFC (2018-2019); *Awesome-Con* at Washington, DC (2018-2019); *Space Night* with the Bowie Baysox minor league baseball team in Bowie, MD (2018); *US Science and Technology Expo* in Washington, DC (2019)
- Volunteer Lead Organizer** of the CCSU Physics Open House interacting with ~50 local high school students (2015, 2016)