

Ellen Catherine Creecy
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Education

2018-present. Department of Earth and Atmospheric Sciences, University of Houston, Houston, Texas.

Ph.D. in Atmospheric Sciences, expected graduation 2022
Thesis Advisors: Dr. Xun Jiang and Dr. Liming Li
Cumulative GPA: 4.0

2014-2018. The Honors College, University of Houston, Houston, Texas.

B.S. in Environmental Sciences, minor in Mathematics
Cumulative GPA: 3.928

Teaching Experience

Teaching Assistant for Introduction to Meteorology: GEOL 1150 (2019-present), University of Houston

- Delivered biweekly lectures
- Graded exams and extra credit assignments
- Proctored exams for lecture class (GEOL 1350)

Teaching Assistant for Introduction to Global Climate Change: GEOL 1102 (2018), University of Houston

- Delivered biweekly lectures
- Graded assignments and extra credit
- Proctored exams for lecture class (GEOL 1302)

Research Experience

Graduate Research Assistant to Dr. Xun Jiang, Summer 2019 and Summer 2020, University of Houston

- Continued work on doctoral research project
- Completed dissertation proposal

Doctoral Research Project

Temporal Variations of Titan's Radiant Energy Budget and Comparative Studies with Earth

- Measured seasonal variations of Titan's emitted power from 2004 to 2017 using data acquired from Cassini spacecraft, 2018-2019
- Measured temporal variations of Titan's absorbed solar power from 2004 to 2017 using data acquired from Cassini spacecraft, 2019-2020
- Combined research of Titan's radiant thermal energy with absorbed solar power to determine long-term spatiotemporal variations of Titan's global energy budget during Cassini epoch, 2019-2020

Graduate Research

- Analyzed ozonesonde data utilizing different methods such as linear regression and principal component analysis using IDL
- Used MATLAB to analyze ozone microwave radiometer data
- Used micropulse lidar data to analyze aerosols at different altitudes
- Used GIS to complete projects covering topics such as spatial analysis, terrain modeling, map projections, and data acquisition and integration
- Designed and managed project studying pollutants and air mass movement during forest fire events in New Mexico
- Worked specifically with map design, building geodatabases, digitizing, python programming, surface hydrology, and groundwater tools
- Used Igor to process ozone data sets from Moody Tower, University of Houston
- Set up POM (personal ozone monitor) to take measurements of ozone on UH's campus

Publications in Refereed Journals

Li, L., **Creecy, E. C.**, Jiang, X., West, R. A., Fry, P. M., Nixon, C. A., Kenyon, M. E. Energy Imbalance on Titan. *Nature Communications*, under review.

Creecy, E. C., Li, L., Jiang, X., Nixon, C. A., West, R. A., Kenyon, M. E. Seasonal Variations of Titan's Brightness. *Geophys. Res. Lett.*, 46, doi: 10.1029/2019GL084833, 2019.

Submitted White Papers

Li, L., West, R. A., Kenyon, M. E., Nixon, C. A., Fry, P. M., Wenkert, D., Hofstadter, M. D., Jiang, X., **Creecy, E. C.**, Sanchez-Lavega, A., Baines, K. H., Mallama, A., Hu, R., Achterberg, R. K., Aslam, S., Banfield, D., Dyudina, U., Fortney, J. J., Ingersoll, A. P., Kleinböhl, A., Fletcher, L., Limaye, S., Marley, M. S., Smith, M. D., Soderlund, K. M., Spilker, L. J., Young, C. L. Radiant Energy Budgets and Internal Heat of Planets and Moons. A white paper to Planetary Science and Astrobiology Decadal Survey 2023-2032, 2020.

Conference Presentations

Oral Presentations

Creecy, E. C., Li, L., Jiang, X., West, R. A., Fry, P. M., Nixon, C. A., Kenyon, M. E. Energy Imbalance on Titan, P071-04, *AGU Fall Meeting*, Dec. 1-20, 2020.

Poster Presentations

Li, Li., West, R. A., Kenyon, M. E., Nixon, C. A., Fry, P. M., Hofstadter, M. D., Wenkert, D. D., Jiang, X., Creecy, E. C., Future exploration of the radiant energy budgets and internal heat of planets and moons, NASA Outer Planets Assessment Group (OPAG) Meeting, Lunar and Planetary Institute, Houston, TX. February 3-4, 2020.

Creecy, E. C., Li, L., Jiang, X., Nixon, C. A., West, R. A., Kenyon, M. E. Seasonal Variations of Titan's Brightness, P23D-3526, *AGU Fall Meeting*, Dec. 9-13, 2019.

Media Reports

Saturn's largest moon, Titan, may offer insights for Earth

<https://www.sciencedaily.com/releases/2019/12/191203114522.htm>

A study of Saturn's largest moon may offer insights for Earth

<https://phys.org/news/2019-12-saturn-largest-moon-insights-earth.html>

Academic Awards and Honors

Outstanding Academic Achievement Award in Atmospheric Science, University of Houston, 2020-2021

Earth and Atmospheric Science Teaching Assistant Scholarship, University of Houston, 2018-2020

Presidential Graduate Scholarship, University of Houston, 2018-2020

Earth and Atmospheric Science Undergraduate Scholarship, University of Houston, 2018-2019

Robert S. Morris Memorial Scholarship, University of Houston, 2017-2018

Academic Excellence Scholarship, University of Houston, 2014-2018

Honors College Scholarship, The Honors College, University of Houston, 2014-2018

Dean's list, University of Houston, 2014-2020

Work Experience

Camp Guide at the Houston Zoo (Summer 2017)

- The Houston Zoo's summer program focused on teaching elementary age children about wildlife in a fun, engaging atmosphere
- Duties included teaching children about zoo animals through games and activities on zoo grounds
- Led a group of 8-10 kids to different exhibits, explaining the importance of sustainability and renewable resources

Youth Conservation Corps at Santa Fe Children's Museum (Summer 2016)

- The Children's Museum focuses on interactive learning for children of all ages
- Performed daily tasks maintaining the garden, took on larger projects, had my own program to educate children ages five through ten about rocks and minerals, and participated in several workshops regarding conservation and organic gardening

Volunteer Work

The Lighthouse of Houston (2014-2017)

- The Lighthouse is a nonprofit education and service center for the blind and visually impaired
- When volunteering, I assisted with cooking, trivia, and other daily activities