

# Zeeve Rogoszinski

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## Education

### University of Maryland

PH.D. IN ASTRONOMY

M.S. IN ASTRONOMY

College Park, MD

Aug 2020 (expected)

Dec 2016

### Vassar College

B.A. IN ASTRONOMY & PHYSICS

Poughkeepsie, NY

Jun 2014

## Skills

**Programming Languages (proficient):** Python, C,  $\text{\LaTeX}$ , Mathematica, shell scripting

**Programming Languages (novice):** HTML/CSS

**Tools & Software:**

Numpy, Matplotlib, Pandas, Scikit-learn, SciPy, Seaborn

Git, Jupyter Notebook, Microsoft Office, Slurm, Unix/Linux

**Spoken Languages:**

English (native), Hebrew (advanced)

## Research Experience

### Ann G. Wylie Dissertation Fellow/**NASA Earth and Space Science Fellow**

U Maryland

ADVISOR: DR. DOUGLAS HAMILTON

present

- Responsible for model development, execution, and visualization of C based simulations for the evolution of planetary spin-states via spin-orbit resonances, gas accretion, and collisions.
- Developed Python post-processing tools for data aggregation (up to 1-10 TB), visualization, and statistical analysis.
- Repurposed an N-body simulator using a Python wrapper to calculate the evolution of satellite orbits after 100s of collisions.
- Published a novel explanation for Uranus's and Neptune's tilts that both reduces the mass and number of subsequent impacts, and preserves the planets' spin periods. Reprints and additional information can be found on my website.

### Summer Intern

NASA GSFC

ADVISOR: DR. JOHN HEWITT

2014

- Developed a Python image processing and analysis script to study cosmic ray origins in supernova remnants.

### Senior Thesis

Vassar College

ADVISOR: DR. DEBRA ELMEGREEN

2013-2014

- Analyzed elliptical galaxy data to find correlations between structure and star formation rates.

### Keck Northeast Astronomy Consortium Summer Research Fellow

Williams College

ADVISOR: DR. JAY PASACHOFF

2013

- Processed and analyzed raw images from the 2012 transit of Venus to explain the black-drop effect.

## Fellowships & Awards

2020	<b>Ann G. Wylie Dissertation Fellowship,</b>	U Maryland
2016 - 2019	<b>NASA Earth and Space Science Fellowship,</b> 28 out of 180 selected	NASA
2016	<b>Hartmann Student Travel Grant,</b>	AAS
2014	<b>Departmental Honors in Astronomy,</b>	Vassar College
2014	<b>Departmental Honors in Physics,</b>	Vassar College
2014	<b>General Honors,</b>	Vassar College
2014	<b>Sigma Xi,</b>	
2013	<b>Ethel Hickox Pollard Memorial Physics Award,</b>	Vassar College
2013	<b>Janet Murray '31 Memorial Scholarship,</b>	Vassar College

## Publications

### The Brute-Force Search for Planet Nine

LAWRENCE, S., ROGOSZINSKI, Z., 2020, [ARXIV:2004.14980](https://arxiv.org/abs/2004.14980)

## Tilting Uranus: Collisions vs. Spin-Orbit Resonance

ROGOSZINSKI, Z., HAMILTON D. P., 2020, UNDER REVIEW, [ARXIV:2004.14913](#)

## Tilting Ice Giants with a Spin-Orbit Resonance

ROGOSZINSKI, Z., HAMILTON D. P., 2020, APJ. [ARXIV:1908.10969](#)

## Selected News Articles

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### Here's Why We Must Send 100 Spacecraft To The Edge Of The Solar System

BY JAMIE CARTER

Forbes

May 2020

### A New Approach to Tilting Uranus

BY WILL SAUNDERS

AAS Nova

March 2020

## Presentations

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### Tilting Ice Giants with Circumplanetary Disks

ROGOSZINSKI, Z., HAMILTON D. P.

Division of Dynamical Astronomy

Jun 2019

### Using collisions and resonances to tilting Uranus

ROGOSZINSKI, Z., HAMILTON D. P.

American Astronomical Society

Jan 2018

### Continuing the investigation to tilting Uranus with a secular spin-orbit resonance

ROGOSZINSKI, Z., HAMILTON D. P.

Division of Planetary Science

Oct 2017

### Tilting Uranus without a Collision

ROGOSZINSKI, Z., HAMILTON D. P.

AstroCon DC

Jul 2017

## Posters

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### Can The Spin Rates of Irregular Satellites Provide Constraints To Their Formation Histories?

ROGOSZINSKI, Z., HAMILTON D. P.

EPSC-DPS Joint Meeting

Sept 2019

### How do collisions shape the orbits of irregular satellites?

ROGOSZINSKI, Z., HAMILTON D. P.

Division of Planetary Science

Oct 2018

### Why is it so difficult to tilt Uranus?

ROGOSZINSKI, Z., HAMILTON D. P.

Division of Dynamical Astronomy

Apr 2018

### Tilting Uranus without a Collision

ROGOSZINSKI, Z., HAMILTON D. P.

Division of Planetary Science

Oct 2016

### Constraining Cosmic Ray Origins Through Spectral Radio Breaks In Supernova Remnants

ROGOSZINSKI, Z., HEWITT, J. W.

American Astronomical Society

Jan 2015

### Observations of the Black-Drop Effect at the 2012 Transit of Venus

ROGOSZINSKI, Z., PASACHOFF, J. M.

American Astronomical Society

Jan 2014

## Services & Internships

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### GRAD-MAP Member

VOLUNTEERED WITH THE GRAD-MAP PROGRAM BY ASSISTING WITH OUTREACH, AND HELPING TO PLAN THE WINTER WORKSHOP. GRAD-MAP IS A DIVERSITY INITIATIVE AND GRADUATE STUDENT LED ORGANIZATION BY THE ASTRONOMY AND PHYSICS DEPARTMENTS DEDICATED TO SUSTAINING TIES BETWEEN UMD AND OTHER MINORITY SERVING INSTITUTIONS. FOR MORE INFORMATION, VISIT: [WWW.UMDGRADMAP.ORG](http://WWW.UMDGRADMAP.ORG)

U Maryland

2015-2018

### Executive Secretary

A SECRETARY POSITION AT A NASA PEER REVIEW PANEL FOR ANNUAL PROPOSALS. THESE ARE USUALLY RESERVED FOR EARLY SCIENTISTS TO OBSERVE AND LEARN FROM THE PROPOSAL DECISION PROCESS.

NASA

2017, 2018

### Observatory Assistant

MAINTAINED AND OPERATED THE SCHOOL'S OBSERVATORY.

Vassar College

2010-2012

# Teaching

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## **Astronomy 101 TA**

SUPERVISORS: GRACE DEMING, DR. DOUGLAS HAMILTON, DR. LEE MUNDY, DR. ELIZA KEMPTON

*U Maryland*

*2014-2016, Fall 2019*

## **Academic Astronomy Intern**

SUPERVISOR: DR. DEBRA ELMEGREEN

*Vassar College*

*2013-2014*

## **Teaching Assistant**

SUPERVISOR: DR. JAY PASACHOFF

*Williams College Planetarium*

*Summer 2013*