

Thea Kozakis

ASTROPHYSICIST · ASTROBIOLOGIST

National Space Institute, Technical University of Denmark, Lyngby, Denmark

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“Imagination will often carry us to worlds that never were, but without it we go nowhere.” - Carl Sagan

Education & Academic Positions

Postdoctoral Researcher

NATIONAL SPACE INSTITUTE, TECHNICAL UNIVERSITY OF DENMARK

- Postdoctoral fellowship with Exoplanet Group

Lyngby, Denmark

Sept 2020 - present

PhD Astrophysics

CARL SAGAN INSTITUTE, CORNELL UNIVERSITY

- Advisor: Lisa Kaltenegger
- Thesis: Stellar UV Environments and Planetary Habitability Throughout Stellar Evolution

Ithaca, New York, USA

August 2020

MS Astrophysics

CARL SAGAN INSTITUTE, CORNELL UNIVERSITY

- Advisor: Lisa Kaltenegger
- Funded by New York Space Grant

Ithaca, New York, USA

May 2017*

*medical exemption granted from the University for the 2015-2016 academic year

BS Astrophysics, BS Physics

COLLEGE OF CHARLESTON

- Advisor: Joseph Carson
- Thesis: Directly Imaging Planets Around High-Mass Stars
- Minor: Mathematics

Charleston, South Carolina, USA

May 2013

Research Interests

terrestrial planets, terrestrial planetary habitability, white dwarf planetary systems, photochemical/climate atmospheric modeling, ozone formation, effects of UV light on surface life, origins of life, planet-star interactions, biosignature modeling and detection

Academic Honors & Grants

2019	NASA New York Space Grant , NASA New York Space Grant Consortium	Cornell University
2017, 2018	Simons Collaboration on the Origins of Life Grant , Simons Foundation	Cornell University
2016	Eleanor York Prize , Astronomy and Space Sciences Department	Cornell University
2015	Exemplary Poster Award , Emerging Researchers in Exoplanet Science Symposium	Pennsylvania State University
2013-2014	NASA New York Space Grant , NASA New York Space Grant Consortium	Cornell University
2014, 2015	NSF Graduate Fellowship Honorable Mention , National Science Foundation	Cornell University
2013	Outstanding Undergraduate Research Award , South Carolina Academy of Science	College of Charleston
2013	Department Honors Award , Department of Physics & Astronomy	College of Charleston
2013	Outstanding Student Award , School of Sciences and Mathematics	College of Charleston
2012	Major Academic Year Support Grant , School of Sciences and Mathematics	College of Charleston
2012	Summer Undergraduate Research with Faculty Grant , School of Sciences and Mathematics	College of Charleston
2012	Goldwater Scholarship Honorable Mention , Scholarship & Excellence in Education Foundation	College of Charleston

Publications

T. Kozakis, J. M. Mendonça, L. A. Buchhave, 2022, *Is ozone a reliable proxy for molecular oxygen? I. The O₂-O₃ relationship for Earth-like atmospheres*, in production with A & A

Z. Lin, S. Seager, S. Ranjan, **T. Kozakis**, & L. Kaltenegger, 2022, *H₂-dominated Atmosphere as an Indicator of Second-generation Rocky White Dwarf Exoplanets*, ApJL, 925, L10

T. Kozakis & L. Kaltenegger, 2020, *High resolution Spectra of Earth-Like Planets Orbiting Red Giant Host Stars*, AJ, 160, 225

L. Kaltenegger, R. J. MacDonald, **T. Kozakis**, et al., 2020, *The White Dwarf Opportunity: Robust Detections of Molecules in Earth-like Exoplanet Atmospheres with the James Webb Space Telescope*, ApJL, 901, L1

T. Kozakis, Z. Lin, L. Kaltenegger, 2020, *Planetary Spectra and Biosignatures of Earth-like Planets Orbiting in the White Dwarf Habitable Zone*, ApJL, 894, L6

T. Kozakis & L. Kaltenegger, 2019, *Atmospheres and UV Environments of Earth-like Planets throughout Post-main-sequence Evolution*, ApJ, 875, 99

T. Kozakis, L. Kaltenegger, & D.W. Hoard, 2018, *UV Surface Environments and Atmospheres of Earth-like Planets Orbiting White Dwarfs*, ApJ, 862, 69

T. Boyajian, ... **T. Kozakis**, et al., 2016, *Planet Hunters X. KIC 8462852: Where's the flux?*, MNRAS

J. Carson, C. Thalmann, M. Janson, **T. Kozakis**, et al., 2013, *Direct Imaging Discovery of a 'Super-Jupiter' Around the late B-Type Star κ And*, ApJL, 763, 32

Presentations

Danish Annual Astronomy Meeting, talk

IS OZONE A RELIABLE PROXY FOR MOLECULAR OXYGEN?

Fredericia, Denmark

May 2022

Astrobiology Science Conference, talk

IS OZONE A RELIABLE PROXY FOR MOLECULAR OXYGEN?

Atlanta, Georgia, USA

May 2022

Exoplanets IV, poster

IS OZONE A RELIABLE PROXY FOR MOLECULAR OXYGEN?

Las Vegas, Nevada, USA

May 2022

Cambridge Exoplanet Seminar, invited talk

LIFE AFTER (STELLAR) DEATH: HABITABILITY AROUND WHITE DWARFS

Cambridge University, Cambridge,

UK

June 2021

Annual Danish Astronomy Meeting, talk

LIFE AFTER (STELLAR) DEATH: HABITABILITY AROUND WHITE DWARFS

Online

May 2021

STScI Exoplanets, Star and Planet Formation Seminar, invited talk

LIFE AFTER (STELLAR) DEATH: HABITABILITY AROUND WHITE DWARFS

Space Telescope Science Institute,

Maryland, USA (online)

May 2021

Valparaiso University Physics & Astronomy Colloquium, invited talk

LIFE AFTER (STELLAR) DEATH: HABITABILITY AROUND WHITE DWARFS

Valparaiso University, Valparaiso,

Indiana, USA (online)

March 2021

AAS Winter Meeting, talk

LIFE AFTER (STELLAR) DEATH: HABITABILITY AROUND WHITE DWARFS

Online

January 2021

MIT Exoplanet Tea, invited talk

LIFE AFTER (STELLAR) DEATH: HABITABILITY AROUND WHITE DWARFS

MIT, Cambridge, Massachusetts,

USA (online)

October 2020

Exoplanets III, talk	Heidelberg, Germany (online)
LIFE AFTER (STELLAR) DEATH: ATMOSPHERES AND BIOSIGNATURES OF EARTH-LIKE PLANETS ORBITING IN THE HABITABLE ZONES OF WHITE DWARFS	July 2020
AAS Winter Meeting, dissertation talk	Honolulu, Hawai'i, USA
PLANETARY HABITABILITY AND BIOSIGNATURES THROUGHOUT STELLAR EVOLUTION	January 2020
Extreme Solar Systems IV, poster	Reykjavík, Iceland
DYING TO LIVE: POST-MAIN SEQUENCE HABITABILITY	August 2019
Exoclimates V, poster	University of Oxford, Oxford, UK
DYING TO LIVE: POST-MAIN SEQUENCE HABITABILITY	August 2019
Astrobiology Graduate Conference, talk	Salt Lake City, Utah, USA
ATMOSPHERES AND UV ENVIRONMENTS OF PLANETS THROUGHOUT POST-MAIN SEQUENCE EVOLUTION	July 2019
Emerging Researchers in Exoplanet Science Symposium, talk	Cornell University, Ithaca, New York, USA
ATMOSPHERES AND UV ENVIRONMENTS OF PLANETS THROUGHOUT POST-MAIN SEQUENCE EVOLUTION	June 2019
AAS Winter Meeting, talk	Seattle, Washington, USA
HABITABILITY OF POST-MAIN SEQUENCE PLANETARY SYSTEMS	January 2019
Planetary Lunch Talk Series, talk	Cornell University, Ithaca, New York, USA
LIFE AFTER (STELLAR) DEATH: HABITABILITY AROUND WHITE DWARFS	August 2018
Graduate Student/Post-Doctorate Seminar, talk	Cornell University, Ithaca, New York, USA
DYING TO LIVE: POST-MAIN SEQUENCE HABITABILITY	August 2018
Cool Stars 20, poster	Boston, Massachusetts, USA
ATMOSPHERES AND UV GROUND ENVIRONMENT FOR PLANETS ORBITING RED GIANTS	August 2018
University of St Andrews, invited talk	University of St Andrews, St Andrews, UK
UV SURFACE ENVIRONMENTS AND ATMOSPHERES OF EARTH-LIKE PLANETS ORBITING WHITE DWARFS	July 2018
University of Edinburgh, invited talk	University of Edinburgh, Edinburgh, UK
UV SURFACE ENVIRONMENTS AND ATMOSPHERES OF EARTH-LIKE PLANETS ORBITING WHITE DWARFS	July 2018
Exoplanets II, poster	Cambridge University, Cambridge, UK
UV SURFACE ENVIRONMENTS AND ATMOSPHERES OF EARTH-LIKE PLANETS ORBITING WHITE DWARFS	July 2018
Graduate Student/Post Doctorate Seminar, talk	Cornell University, Ithaca, New York, USA
DO YOU BELIEVE IN LIFE AFTER (STELLAR) DEATH?: WHITE DWARF HABITABILITY	June 2018
Emerging Researchers in Exoplanet Science Symposium, poster	Pennsylvania State University, State College, Pennsylvania, USA
ATMOSPHERES AND UV GROUND ENVIRONMENT FOR PLANETS ORBITING RED GIANTS	June 2018
Emerging Researchers in Exoplanet Science Symposium, talk	Pennsylvania State University, State College, Pennsylvania, USA
BIOSIGNATURES AND UV ENVIRONMENTS OF EARTH-LIKE PLANETS ORBITING WHITE DWARFS	June 2017
Astrobiology Graduate Conference, talk	Charlottesville, Virginia, USA
BIOSIGNATURES AND UV ENVIRONMENTS OF EARTH-LIKE PLANETS ORBITING WHITE DWARFS	June 2017
Astrobiology Science Conference, poster	Mesa, Arizona, USA
BIOSIGNATURES AND UV ENVIRONMENTS OF EARTH-LIKE PLANETS ORBITING WHITE DWARFS	April 2017

Astrobiology Science Conference, poster

AGE ROTATION-ACTIVITY RELATIONSHIP OF KEPLER FIELD STARS

Chicago, Illinois, USA

June 2015

Emerging Researchers in Exoplanet Science Symposium, poster

AGE ROTATION-ACTIVITY RELATIONSHIP OF KEPLER FIELD STARS

Pennsylvania State University, State

College, Pennsylvania, USA

May 2015

South Carolina Academy of Science Conference, talk

DIRECT IMAGING DISCOVERY OF A 'SUPER-JUPITER' AROUND A LATE B-TYPE STAR

Columbia, South Carolina, USA

April 2013

AAS Winter Meeting, poster

THE SUBARU SEEDS IMAGING SEARCH FOR EXOPLANETS AROUND HIGH-MASS STARS

Long Beach, California, USA

January 2013

AAS Winter Meeting, poster

THE SUBARU SEEDS IMAGING SEARCH FOR EXOPLANETS AROUND HIGH-MASS STARS

Austin, TX, USA

January 2012

Teaching

Teaching Assistant: From New Worlds to Black Holes

LECTURER: DR LISA KALTENEGGER

Cornell University, Ithaca, NY, USA

Fall 2015 (Head TA), 2018

- Introductory astronomy class focusing on the Universe as a whole
- Organized other TAs, managed course website, and dealt with logistical issues
- Assisted in writing and grading homework assignments and exams
- Taught recitation sections and held office hours

Teaching Assistant: Our Solar System

LECTURERS: DRs STEVE SQUYRES AND PHIL NICHOLSON

Cornell University, Ithaca, NY, USA

Spring 2015

- Introductory astronomy class focusing on the Solar System
- Taught recitation sections and lab sections and held office hours
- Assisted in writing and grading homework assignments and exams

Teaching Assistant: A Spacecraft Tour of the Solar System: Science, Policy and Exploration

LECTURER: DR ALEXANDER HAYES

Cornell University, Ithaca, NY, USA

Fall 2014

- Writing class focused on exploration of the Solar System
- Assisted in teaching students how to write popular science articles
- Graded written work and gave feedback and held office hours
- Managed course website

Outreach

Expanding Your Horizons

WORKSHOP DESIGNER/ORGANIZER

Cornell University, Ithaca, NY, USA

2015-2020

- Yearly outreach event attended by middle school girls from New York to learn about the different STEM fields
- Part of the original astronomy workshop design team, team leader for the past 2 years
- Wrote yearly applications for event approval, recruit/train volunteers and run event

Mental Health Counselor Training (EARS)

CERTIFIED MENTAL HEALTH COUNSELOR/TRAINER

Ithaca, NY, USA

2015-2020

- Semester long training offered by EARS (Empathy Assistance and Referral Service), a walk-in mental health counseling program
- Give presentations on empathetic listening and communication skills to Cornell students of all levels
- Small group teaching of Cornell graduate students and post doctoral researchers skills of mental health counseling

Museum in the Dark

ORGANIZER

Ithaca, NY, USA

2014-2017

- Halloween-themed outreach event at a local museum with astronomy related demos
- Liaison between the museum and the astronomy department
- Recruited/trained volunteers to run science demos and obtained/organized all materials for the event

4-H Focus for Teens Workshop

Cornell University, Ithaca, NY, USA

ORGANIZER

2014-2017

- Summer outreach event for high school students in the New York 4-H program to attend STEM related workshops
- Helped design/modify the 3 day workshop
- Recruited/trained graduate student volunteers

Academic Service

Organizer

Technical University of Denmark

ASTRONOMY & ASTROPHYSICS SEMINAR

September 2021 - present

SOC/session chair

Fredericia, Denmark

ANNUAL DANISH ASTRONOMY MEETING

May 2022

SOC/VOC/session chair

Online

EMERGING RESEARCHERS IN EXOPLANET SCIENCE SYMPOSIUM

June 2021

Session chair

Honolulu, Hawai'i

AAS WINTER MEETING

January 2020

SOC/LOC/session chair

Cornell University

EMERGING RESEARCHERS IN EXOPLANET SCIENCE SYMPOSIUM

June 2019

LOC/session chair

Pennsylvania State University

EMERGING RESEARCHERS IN EXOPLANET SCIENCE SYMPOSIUM

June 2018

LOC/session chair

Yale University

EMERGING RESEARCHERS IN EXOPLANET SCIENCE SYMPOSIUM

June 2017

SOC/LOC/session chair

Cornell University

EMERGING RESEARCHERS IN EXOPLANET SCIENCE SYMPOSIUM

June 2016

Organizer

Cornell University

CORNELL PLANETARY LUNCH SEMINAR

August 2015 - May 2016

Reviewer

Astrophysical Journal