COLBY OSTBERG

University of California, Riverside
(831)917-8399 ⋄ costb001@ucr.edu

EDUCATION & INTERNSHIPS

Education

PhD in Geological Sciences (Expected Graduation: Fall 2023)
Department of Earth and Planetary Science
University of California, Riverside — Riverside, CA *September 2018 - Present*

Bachelor of Science in Physics
Physics and Astronomy Department
San Francisco State University — San Francisco, CA *August 2014 - June 2018*

Internships

DAVINCI+ Internship at NASA GSFC
Investigating the potential of detecting volcanism on exoplanets
Advisor: Dr. Scott Guzewich
NASA Goddard Space Flight Center — Greenbelt, MD *September 2022 - January 2023*

JPL Year-Round Internship Program
Using new lithospheric thickness values for Venus to update heat flow estimates
Advisor: Suzanne Smrekar
NASA Jet Propulsion Laboratory — Pasadena, CA *November 2019 - November 2020*

JPL Summer Internship Program
Constraining the thickness of Venus' elastic lithosphere
Advisor: Suzanne Smrekar
NASA Jet Propulsion Laboratory — Pasadena, CA *Summer 2019*

SCIENTIFIC INTERESTS

• **Generating Earth and Venus Transit Spectra**: Using the Planetary Spectrum Generator (PSG) to produce transmission spectra for a variety of different exo-Earths and exo-Venuses.

• **Simulating JWST Observations of Exoplanets**: Using Pandexo, I have been modelling JWST transit observations of exo-Earths and exo-Venuses.

• **Using 3D GCM Outputs to Model Exoplanet Spectra**: GlobES, an application included in the PSG radiative transfer suite, can use GCM data to produce reflected light spectra of exoplanets.

• **Retrieval Models** I plan to become proficient with retrieval models (i.e. TAUREX, NEMESIS, CHIMERA) that are used to infer abundance and structure information from transit spectra.

PUBLICATIONS

"The Demographics of Terrestrial Planets in the Venus Zone"
C. Ostberg et al. (2023) Astronomical Journal

"Predicting the Yield of Potential Venus Analogs from *TESS* and their Potential for Atmospheric Characterization"
C. Ostberg, S.R. Kane, (2019) Astronomical Journal

"Earth-like lithospheric thickness and heat flow on Venus consistent with active rifting"
Smrekar, Suzanne E., **Colby Ostberg**, and Joseph G. O'Rourke, Nature Geoscience (2022): 1-6.

"Synergies between Venus & Exoplanetary Observations"
Michael, Way, [et al. including **C. M. Ostberg**] " (2022)

"Science Extraction from TESS Observations of Known Exoplanet Hosts"
S.R. Kane, Z. Li, E.T. Wolf, **C.M. Ostberg**, M.L. Hill, (2021), Astronomical Journal

"Reading Between the Lines: Investigating the Ability of JWST to Identify Discerning Features in exoEarth and exoVenus Transmission Spectra"
C. Ostberg et al. (2023) Submitted to AJ

"A Global Survey of Lithospheric Flexure at Steep-Sided Domical Volcanoes on Venus Reveals Intermediate Elastic Thicknesses"
M.E. Borelli, J.G. O'Rourke, S.E. Smrekar, **C.M. Ostberg**, (2021), JGR Planets

"Transits of Known Planets Orbiting a Naked-eye Star"
S.R. Kane, [et al, including **C.M. Ostberg**] (2020), Astronomical Journal

"Science Extraction from TESS Observations of Known Exoplanet Hosts"
S.R. Kane, J.L Bean, T.L. Campante, P.A. Dalba, T. Fetherolf, T. Mocnik, **C.M. Ostberg**, J. Pepper, E.R. Simpson, M.C. Turnbull, G.R. Ricker, R. Vanderspek, D.W. Latham, S. Seager, J.N. Winn, J.M. Jenkins, D. Huber, W.J. Chaplin, (2020), PASP

"A Catalog of Habitable Zone Exoplanets"
M. L. Hill, [et al. including **C. M. Ostberg**] The Astronomical Journal 165.2 (2023): 34

FELLOWSHIPS & COMPETITIVE AWARDS

- **2023 Dissertation Year Program Fellowship**, UCR Earth and Planetary Sciences Dept.
- **Outstanding Student Presentation Award**, American Geophysical Union Fall 2019 Meeting
- **Dean's Distinguished Fellowship Award**, UC Riverside (2018-2023)
- **NASA Astrobiology Institute Student Travel Stipend**, Astrobiology Science Conference 2019
- **Venus Exploration and Analysis Group (VEXAG) Travel Stipend**, 17th Meeting of VEXAG 2019
- **VEXAG Travel Stipend**, Exoplanets in our Backyard 2020

TALKS AND PRESENTATIONS

Talks

"The Study of Venus Through Exoplanets and DAVINCI (**Invited**)"
C. Ostberg
NASA Night Sky Network, Remote Meeting, Apr 2022

"A Catalog of ExoVenus Candidates and Their Potential for Follow-Up Observations"
C. Ostberg, S.R. Kane, P.A. Dalba
AbSciCon Spring Meeting 2022, Atlanta, GA

"Identifying Potential Venus Analogs from Exoplanet Discoveries"
C. Ostberg, S.R. Kane
American Geophysical Union Fall 2019 Meeting (Abstract ID: 517488), San Francisco, CA

Posters

"Surprising Similarities: Comparing the Transit Spectra of Potential Earth-Like and Venus-Like Exoplanets"
C.M. Ostberg, S.R. Kane, P.A. Dalba
AGU Fall Meeting 2021

"Identifying Potential Venus Analogs from Exoplanet Discoveries"
C. Ostberg, S.R. Kane
Extreme Solar Systems IV, Reykjavick, Iceland

"Understanding Venus' Interior Processes as a Control Case for the Evolution of Earth and Earth-sized Exoplanets"
S. Smrekar, V. Auerbach, **C. Ostberg**, J.G. O'Rourke, A. Davaille
American Geophysical Union Fall 2019 Meeting (Abstract ID: 589674), San Francisco, CA

Other

Invited Speaker for NASA Night Sky Network (April 2022)

Invited Speaker for Riverside Astronomical Society (June 2022)

Session Chair at Exoplanets in our Backyard 2020

EDUCATIONAL EXPERIENCE

Graduate Teaching Assistant: I have led lab sections in 4 courses: Oceanography, Planetary Habitability, Planets in Science Fiction, and Astrobiology.

SFSU Campus Academic Outreach Program Tutor: I tutored undergraduate students to increase their skills in calculus and physics, and led short lectures which focused on areas of common weakness