

Curriculum Vitae

Adam J. R. W. Smith
Bachelor of Science in Physics (Astrophysics)
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Summary

A 2nd year Astronomy graduate student with research interests in exoplanets, exoplanet atmospheres, and astrobiology. Strong programming skills developed over the course of substantial undergraduate, post-baccalaureate, and graduate-level research work. Extensive personal experience in customer service. Former restaurant shift supervisor. Distance runner. Former amateur eSport team captain.

Research Experience

Graduate Research Assistant at New Mexico State University (August 2020-present)
Use of Markov-chain Monte Carlo for Bayesian retrievals. Research focused on incorporating radial-velocity information into predictions of exoplanet atmosphere detection potential.

Junior Research Scientist at NASA Goddard Space Flight Center (July 2019-July 2020)
Including Bayesian retrieval framework development; designing a parameter grid for exploration of the albedo spectra of rocky exoplanets; development of miscellaneous tools to aid in these projects

Exoplanet Atmosphere Modeller with Dr. Jonathan Fortney (Oct. 2016-July 2019)
Including use of Markov-chain Monte Carlo and Nested Sampling for Bayesian retrievals; forward modelling; Python and Fortran use; color-magnitude analysis; reflected light albedo spectra study

Other interests: Astrobiology, Planet Formation, Stellar Physics

Education

New Mexico State University (NMSU), Las Cruces, NM (2020-present).
University of California Santa Cruz (UCSC), Santa Cruz, CA (2016-2019). Graduate:
Bachelor of Science in Physics (Astrophysics).
Sacramento City College (SCC), Sacramento, CA (2013-2016). Transferred to UCSC.
McKinleyville High School (McK), McKinleyville, CA (2000-2004). Graduate.

Presentations

“A Survey of Model Predictions for Reflection Spectra of Rocky Planets: Towards Understanding Future Observing Mission Requirements”

Smith, Adam J. R. W.; Mandell, Avi; Villanueva, Geronimo; Munoz, Carlos (2019/2020). Flash talk presented at the 2019 SEEC Symposium and at American Astronomical Society 235th Meeting.

“Retrieving Water Vapor from the Reflection Spectra of Earth-Like Worlds: Exploring Large Direct Imaging Missions”

Smith, Adam J. R. W.; Feng, Y. Katherina; Fortney, Jonathan J. (2019). Poster presented at American Astronomical Society 233rd Meeting.

“Library of Giant Planet Reflection Spectra for WFIRST and Future Space Telescopes”

Smith, Adam J. R. W.; Fortney, Jonathan J.; Morley, Caroline; Batalha, Natasha E.; Lewis, Nikole K. (2018). Poster presented at American Astronomical Society 231st Meeting; 2018 UCSC Undergraduate Research Poster Symposium; and 2018 Koret Scholars Undergraduate Research Slam.

Publications

“Simulating Reflected Light Exoplanet Spectra of the Promising Direct Imaging Target, Andromedae d, with a New, Fast Sampling Method Using the Planetary Spectrum Generator”

Saxena, Prabal, Villanueva, Geronimo L., Zimmerman, Neil T., Mandell, Avi M., Smith, Adam J. R. W. (2021). The Astronomical Journal, Volume 162, Issue 1

“Utilizing a Database of Simulated Geometric Albedo Spectra for Photometric Characterization of Rocky Exoplanet Atmospheres”

Smith, Adam J. R. W., Mandell, Avi M., Villanueva, Geronimo L., Moore, Michael Dane (2020). The Astronomical Journal, Volume 160, Issue 5.

“Water Abundances in Rocky Planet Reflection Spectra”

Smith, Adam J. R. W., Feng, Y. Katherina, Fortney, Jonathan J., Robinson, Tyler D., Marley, Mark S., Lupu, Roxana E., Lewis, Nikole K. (2020). The Astronomical Journal, Volume 159, Issue 2.

“Retrieving Water from the Spectra of Exoplanets: Exploring Large Direct Imaging Missions”

Smith, Adam J. R. W. (2019). A senior thesis submitted in partial satisfaction of the requirements for the degree of B.S. in Physics (Astrophysics).

“Color Classification of Extrasolar Giant Planets: Prospects and Cautions”

Batalha, Natasha E.; Smith, Adam J. R. W.; Lewis, Nikole K.; Marley, Mark S.; Fortney, Jonathan J.; Macintosh, Bruce (2018). The Astronomical Journal, Volume 156, Issue 4

Scholarships and Awards

William Webber Voyager Graduate Scholarship, 2020 and 2021 (NMSU)

Koret Scholar, Winter 2018 (UCSC)

“STARS Book Scholarship” Fall 2016, Winter 2017 (UCSC)
“President’s Highest Honors” Fall 2015 and Spring 2016 (SCC)
Awarded a scholarship by Mck Theater Dept., 2004

Other Certificates Training, and Skills

Programming experience (Python 2 and 3; some C, C++, Fortran, and others)
California Food Handler’s Certificate (2013-2016)
Shift Supervisor Training Certificate (2014)

Sports, Interests and Hobbies

Soccer (midfield)
Running (long distance)
Theater (including one professional production)
Gaming (eSports): Squad Captain of team “TG Hamburg Squad” 2015

Non-scientific employment history

Table Server, Cafe Bernardo at the Pavilions (2014-2016)
Cashier/Barista, Cafe Bernardo Davis (2014)
Shift Supervisor, Davis Round Table (2008-2014)
Delivery Driver, Eureka Pizza Hut (2008)
Table Games Dealer, Blue Lake Casino (2006-2007)