

FREDERICK B. DAVIES

PERSONAL INFORMATION

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Citizenship United States of America

EDUCATION

PhD in Astronomy 2012-2015 University of California, Los Angeles
Advisor: Dr. Steven Furlanetto
Thesis title: "Self-consistent Modeling of the Intergalactic Ionizing Radiation Field Across Cosmic Time"
Degree conferred: 11 Sep 2015

*Master of Science
in Astronomy* 2010-2012 University of California, Los Angeles
Advisor: Dr. Steven Furlanetto

*Bachelor of Science
in Physics* 2006-2010 New Mexico Institute of Mining & Technology
Astrophysics Concentration · Summa Cum Laude

ACADEMIC POSITIONS

*Postdoctoral
Fellow* 2015-present Max-Planck-Institut für Astronomie
Galaxies & Cosmology Department
Heidelberg, Germany

PUBLICATIONS

*First Author
Publications* **Davies, F. B.**, Furlanetto, S. R., Dixon, K. L., "A self-consistent 3D model of fluctuations in the helium-ionizing background", 2016, *Monthly Notices of the Royal Astronomical Society*, in press

Davies, F. B., Furlanetto, S. R., "Large fluctuations in the hydrogen-ionizing background and mean free path following the epoch of reionization", 2016, *Monthly Notices of the Royal Astronomical Society*, Volume 460, p.1328-1339

Davies, F. B., Furlanetto, S. R., McQuinn, M., "Quasar ionization front Ly α emission in an inhomogeneous intergalactic medium", 2016, *Monthly Notices of the Royal Astronomical Society*, Volume 457, p.3006-3023

Davies, F. B., Furlanetto, S. R., "The effect of fluctuations on the helium-ionizing background", 2014, *Monthly Notices of the Royal Astronomical Society*, Volume 437, p.1141-1154

*Co-author
Publications* D'Aloisio, A., McQuinn, M., **Davies, F. B.**, Furlanetto, S. R., "Large Fluctuations in the High-Redshift Metagalactic Ionizing Background", submitted to *Monthly Notices of the Royal Astronomical Society*

Walker, R. C., Hardee, P. E., **Davies, F.**, Ly, C., Junor, W., Mertens, F., Lobanov, A., "Observations of the Structure and Dynamics of the Inner M87 Jet", 2016, *Galaxies*, Volume 4, Issue 4, p.46

Co-author
Publications
(continued)

Muñoz, J. A., Peng, S. O., **Davies, F. B.**, Furlanetto, S. R., "The flatness and sudden evolution of the intergalactic ionizing background", 2016, *Monthly Notices of the Royal Astronomical Society*, Volume 455, p.1385-1397

The HESS Collaboration, The MAGIC Collaboration, The VERITAS Collaboration, Barres de Almeida, U., Cara, M., Casadio, C., Cheung, C. C., McConville, W., **Davies, F.**, Doi, A., Giovannini, G., Giroletti, M., Hada, K., Hardee, P., Harris, D. E., Junor, W., Kino, M., Lee, N. P., Ly, C., Madrid, J., Massaro, F., Mundell, C. G., Nagai, H., Perlman, E. S., Steele, I. A., Walker, R. C., Wood, D. L., "The 2010 Very High Energy γ -ray Flare and 10 Years of Multi-wavelength Observations of M 87", 2012, *The Astrophysical Journal*, Volume 746, Article 151, 18 pp.

The VERITAS Collaboration, The VLBA 43 GHz M87 Monitoring Team (Walker, R. C., **Davies, F.**, Hardee, P. E., Junor, W., Ly, C.), The HESS Collaboration, The MAGIC Collaboration, "Radio Imaging of the Very-High-Energy γ -Ray Emission Region in the Central Engine of a Radio Galaxy", 2009, *Science*, Volume 325, Issue 5939, p.444-448

OTHER INFORMATION

Teaching (UCLA)

Winter 2014 · ASTR 6 "Cosmology: Our Changing Concepts of Universe"
Discussion Section

Spring 2013 · ASTR 82 "Stellar Evolution, Galaxies, and Cosmology"
Discussion Section

Fellowship Awards

2014-2015 · UCLA Dissertation Year Fellowship

2010-2011 · UCLA Graduate Division Chancellor's Prize

Recent Oral
Presentations

Sep 2016 · Invited talk at IMPRS Summer School 2016
University of Heidelberg, Heidelberg, Germany
"Measuring the UV background at the end of reionization with ABC"

Jul 2016 · Talk at From Wall to Web meeting
Max-Planck-Haus, Berlin, Germany
"Measuring the $z > 6$ UV Background with $\text{Ly}\alpha$ and $\text{Ly}\beta$ Forest Flux PDFs"

Jul 2016 · Talk at High- z Malta: Signals from the Deep Past meeting
University of Malta, Valletta, Malta
"Measuring the $z > 6$ UV Background with $\text{Ly}\alpha$ and $\text{Ly}\beta$ Forest Flux PDFs"

Jun 2016 · Talk at Illuminating the Dark Ages workshop
Max-Planck-Institut für Astronomie, Heidelberg, Germany
"What are the Last Gunn-Peterson Troughs in the $\text{Ly}\alpha$ Forest?"

Apr 2015 · Poster at South By High Redshift meeting
University of Texas, Austin, TX, USA
"Semi-numerical modeling of the $z > 5$ ionizing background"

Public Outreach

2010-2014 · UCLA Exploring Your Universe – Volunteer

November 16, 2016