

DOUGLAS H. LAURENCE

Physics Department
Florida International University
Miami, FL, 33199

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PERSONAL INFORMATION

Born: May 21, 1991

Birthplace: Miami, FL

RESEARCH INTERESTS

- Theoretical Astrophysics
- Optical Astronomy
- Blazar Microvariability
- High Energy Astrophysics

EDUCATION

Florida International University Miami, FL
Ph.D in Physics *expected* Fall 2017
Specialization: Theoretical Astrophysics
Dissertation: *A Theoretical Model for Microvariability in Blazar Jets*
Advisor: Dr. James R. Webb

Florida International University Miami, FL
M.S. in Physics August 2017
Non-thesis option
Advisor: Dr. James R. Webb

Florida International University Miami, FL
B.S. in Physics, *cum laude* April 2011
Thesis: *General Relativity v. Special Relativity: Faster-than-Light Travel*
Advisor: Dr. James R. Webb

Miami-Dade College Miami, FL
A.A. in General Studies, *w. Highest Honors* August 2008

APPOINTMENTS

Florida International University Miami, FL
Doctoral Student, Physics Department August 2011 - **Present**
Teaching Assistant, Physics Department August 2011 - August 2016
Adjunct Professor, Physics Department May 2011 - August 2011
Tutor, University Learning Center January 2009 - August 2011
and May 2012 - August 2012

Clutch Prep Miami, FL
Lead Instructor, Physics August 2016 - **Present**

Acting Lead Instructor, Mathematics
Acting Lead Instructor, Engineering

August 2016 - **Present**
August 2016 - **Present**

The Princeton Review

Author, Physics
Content Developer, Physics
Instructor, Physics
Master Level Tutor, Physics
Tutor, Physics

Miami, FL
January 2016 - **Present**
January 2012 - **Present**
May 2011 - July 2015
January 2012 - August 2013
May 2011 - January 2012

AWARDS & FELLOWSHIPS

Patricia & Philip Frost Museum of Science
Science Communication Fellows Program

Miami, FL
August 2015 - Spring 2016

National Science Foundation

Research Experience for Undergraduates in Quantum Optics
Advisor: Dr. Yifu Zhu

Miami, FL
August 2010 - April 2011

PROFESSIONAL SOCIETIES

The American Astronomical Society (AAS)
The American Physical Society (APS)

RESEARCH CONSORTIA

The Southeastern Association for Research in Astronomy (SARA)

PUBLICATIONS

Refereed Papers

1. Bhatta, G., et al., 2016, "Multifrequency Photo-polarimetric WEBT Observation Campaign on the Blazar S5 0716+714: Source Microvariability and Search for Characteristic Timescales", *ApJ*, 831:92
2. Bhatta, G., et al., 2015, "Discovery of a Highly Polarized Optical Microflare in Blazar S5 0716+714 during the 2014 WEBT Campaign", *ApJL*, 809:L27

Papers in Preparation

1. Webb, J.R., Laurence, D.H., et al., "Joint GTC-10 Observations of 0716+714"
2. Webb, J.R., Laurence, D.H., et al., "The Nature of Microvariability in Blazars"

Books – Authored

1. Laurence, D.H., The Princeton Review, 2016, "High School Physics Unlocked", New York: Random House

Books – Production Team Leader

1. The Princeton Review, 2015, “Cracking the AP Physics 2 Exam 2016 ed.”, New York: Random House

Books – Content Reviewer

1. The Princeton Review, 2013, “Cracking the SAT Physics Subject Test 2013-2014 ed.”, New York: Random House
2. The Princeton Review, 2012, “Cracking the AP Physics B Exam 2013 ed.”, New York: Random House
3. The Princeton Review, 2012, “Cracking the AP Physics C Exam 2013 ed.”, New York: Random House

POSTER PRESENTATIONS

1. Dhalla, S., Webb, J.R., Bhatta, G., Laurence, D., 2014, “Analysis of Kepler Lightcurves Using Turbulent Jet Model”, AAS 223 #250.03
2. Webb, J.R., Laurence, D., Bhatta, G., et al., 2013, “Interpretation of Blazar Micro-Variability as Turbulent Jets”, AAS 222 #215.03

INVITED LECTURES & SEMINAR & COLLOQUIA

1. ”Newtonian Mechanics, Stars, and Astronomy”, Florida International University, Miami FL, Oct. 2014
2. ”Particle Acceleration and Synchrotron Emission in Blazar Jets”, Astronomy Colloquia, Florida International University, Miami FL, Nov. 2013
3. ”Variability in the Synchrotron Spectrum of Blazars”, Society of Physics Students, FIU Chapter, Miami FL, Oct. 2013
4. ”A Hadronic Synchrotron Mirror Model for the ”Orphan” TeV Flare in 1ES 1959+650”, Astronomy Colloquia, Florida International University, Miami FL, Sep. 2013
5. ”Variability in the Synchrotron-Self Compton Model of Blazar Emission”, Astronomy Colloquia, Florida International University, Miami FL, Mar. 2013
6. ”Neutrino Oscillations and their Consequences for the Standard Model of Particle Physics”, Department of Mathematics, Florida International University, Miami, FL, Mar. 2012
7. ”Fictitious Forces”, Department of Mathematics, Florida International University, Miami FL, Sep. 2011
8. ”How to Study for Math”, Center for Academic Success, Florida International University, June 2011

TELESCOPE EXPERIENCE

Roque de los Muchachos Observatory Gran Telescopio Canarias (GTC) SARA East Telescope (a.k.a. JKT)	La Palma, Canary Islands, Spain 10.4m optical telescope 1.0m optical telescope
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Kitt Peak National Observatory SARA North Telescope	Tuscon, AR 0.9m optical telescope
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Cerro Tololo Inter-American Observatory SARA South Telescope	La Serena, Chile 0.6m optical telescope
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Stocker Astroscience Center Astronomical Consultants and Equipment (ACE) Telescope	Miami, FL 24-inch optical telescope
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COURSES TAUGHT

Florida International University AST1002L: Descriptive Astronomy Lab (for non-science majors) AST2003L: Solar System Astronomy Lab (for non-science majors) AST2004: Stellar Astronomy, assisted (for non-science majors) AST2004L: Stellar Astronomy Lab (for non-science majors) PHY2048: Physics I w. Calculus, <i>recitation</i> PHY2048L: General Physics Lab I PHY2049: Physics II w. Calculus, <i>recitation</i> PHY2049L: General Physics Lab II PHY2054: Physics II w.o. Calculus, <i>assisted</i>	2011 - 2016
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Clutch Prep College Physics I (<i>e.g. PHY2053</i>) College Physics II (<i>e.g. PHY2054</i>) University Physics I (<i>e.g. PHY2048</i>) University Physics II (<i>e.g. PHY2049</i>) Modern Physics (<i>e.g. PHY3105</i>)	2016 - Present
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The Princeton Review MCAT Preparatory Course, Physics subject	2011 - 2015
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COMMUNITY/PUBLIC SERVICE

- Star Parties at Florida International University
Parties open to the public, where visitors get a chance to see lectures from guest speakers, intermingle with those in the field of astronomy, and perhaps most importantly, get to use telescopes, often for the first time. Organized by Dr. James R. Webb.
- Middle / High School Field Trips Tours for Stocker Astroscience Center
It is quite frequent that middle school or high school classes will come to the observatory for tours, to learn about the research we do, etc. Organized by Dr. James R. Webb.

TECHNICAL STRENGTHS

Computer Languages	Fortran, IDL, MATLAB
Document Preparation	L ^A T _E X