DOUGLAS H. LAURENCE

Department of Physics
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 Micro-variability
- High Energy Astrophysics

EDUCATION

Ph.D., Physics (expected) Spring, 2018
Florida International University

Dissertation: *A Theoretical Model for Microvariability in Blazar Jets*
Advisor: Dr. James R. Webb

M.S., Physics (non-thesis option, awarded en-route to Ph.D.) 2017
Florida International University

B.S., Mathematics (expected) 2018
Indiana University

B.S., Physics (cum laude) 2011
Florida International University

A.A., General Studies (w. highest honors) 2008
Miami-Dade College

APPOINTMENTS

Nova Southeastern University Ft. Lauderdale, FL
Adjunct Professor, Physics and Mathematics 2017 – **Present**

Florida International University Miami, FL
Teaching Assistant, Department of Physics 2011 – 2016
Adjunct Professor, Department of Physics 2011
Tutor, University Learning Center 2009 – 2012

Clutch Prep Miami, FL
Lead Instructor, Physics 2016 – 2017
(Acting) Lead Instructor, Mathematics 2016 – 2017

The Princeton Review Miami, FL
Content Developer, Physics 2012 – **Present**
Instructor, Physics 2011 – 2015
"Master Level" Tutor, Physics 2011 – 2013

AWARDS & FELLOWSHIPS

Patricia & Philip Frost Museum of Science Miami, FL
Science Communication Fellows Program Academic Year, 2015/2016

National Science Foundation REU Miami, FL
Quantum Optics Academic Year, 2010/2011

PROFESSIONAL SOCIETIES

The American Astornomical 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., "Coordinated CIRCE Polarimetry and SARA JKT Multi-frequency Photometry Observations of the Blazar S5 0716+71"
   to be submitted to Galaxies
2. Webb, J.R., Laurence, D.H., et al., "The Nature of Microvariability in Blazars"
   to be submitted to Astronomy & Astrophysics

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

COURSES TAUGHT

Nova Southeastern University
PHYS2350: General Physics I/Lab (combined lectured/lab)

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, *recitation*
PHY2048L: General Physics Lab I
PHY2049: Physics II w. Calculus, *recitation*
PHY2049L: General Physics Lab II
PHY2054: Physics II w.o. Calculus, *assisted*

COMMUNITY/PUBLIC SERVICE

- Star Parties at Florida International University
  Parties open to the public, where vsitors get a chance to see lectures from gues 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	LaTeX