

# DOUGLAS H. LAURENCE

Department of Physics  
Florida International University  
Miami, FL, 33199

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## PERSONAL INFORMATION

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**Born:** May 21, 1991

**Birthplace:** Miami, FL

## RESEARCH INTERESTS

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

## EDUCATION

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<b>Ph.D., Physics</b> Florida International University	(expected) December, 2017
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Dissertation: *A Theoretical Model for Microvariability in Blazar Jets*  
Advisor: Dr. James R. Webb

<b>M.S., Physics</b> (non-thesis option) Florida International University	2017
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<b>B.S., Physics</b> (cum laude) Florida International University	2011
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<b>A.A., General Studies</b> (w. highest honors) Miami-Dade College	2008
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## APPOINTMENTS

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<b>Nova Southeastern University</b> Adjunct Professor, Department of Chemistry & Physics	Ft. Lauderdale, FL 2017 – <b>Present</b>
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<b>Florida International University</b> Teaching Assistant, Department of Physics Adjunct Professor, Department of Physics Tutor, University Learning Center	Miami, FL 2011 – 2016 2011 2009 – 2012
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<b>Clutch Prep</b> Lead Instructor, Physics (Acting) Lead Instructor, Mathematics	Miami, FL 2016 – 2017 2016 – 2017
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**The Princeton Review**  
Content Developer, Physics  
Instructor, Physics  
“Master Level” Tutor, Physics

Miami, FL  
2012 – **Present**  
2011 – 2015  
2011 – 2013

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## AWARDS & FELLOWSHIPS

**Patricia & Philip Frost Museum of Science**  
Science Communication Fellows Program

Miami, FL  
Academic Year, 2015/2016

**National Science Foundation REU**  
Quantum Optics

Miami, FL  
Academic Year, 2010/2011

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## PROFESSIONAL SOCIETIES

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

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## RESEARCH CONSORTIA

The Southeastern Association for Research in Astronomy (SARA)

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## 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**

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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**

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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

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

## COURSES TAUGHT

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**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

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- 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

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<b>Computer Languages</b>	Fortran, IDL, MATLAB
<b>Document Preparation</b>	L <sup>A</sup> T <sub>E</sub> X