

# JORGE VILLA-VARGAS, PH. D.

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## ASTRONOMER

Expertise in numerical modeling of galactic dynamics and evolution. Enthusiast teacher and science communicator with ability to adapt to audiences of all levels and ages. At present, lecturer of physics and positional astronomy for engineers at Universidad Autónoma de Guerrero. Catalyzed major advances in the popularization of astronomy in his geographical region. Hardworking, ability to work well under pressure. Strengths include skills and knowledge in:

- ✓ Use of multimedia technology in instruction.
- ✓ Preparation and delivery of courses.
- ✓ Mastery of physics and astronomy.
- ✓ Enthusiast mentor.
- ✓ Public speaking.
- ✓ Operating public observatory.
- ✓ Adaptability.
- ✓ International career (U.S., France, Mexico).

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## Education

**Université de Provence** Marseilles, France  
Ph. D. in Physics / Astronomy - Honors: Très Honorable 2005  
Advisor : E. Athanassoula.

**Universidad Nacional Autónoma de México** Mexico D.F., Mexico  
M.S. in Astronomy 2000

**Universidad Nacional Autónoma de México** Mexico D. F., Mexico  
B.S. in Physics 1997

- ✦ Research results merited a Ph. D. with honors: Très Honorable.
- ✦ Strong academic record allocated a Ph.D. grant for studies abroad.
- ✦ Fast adaptability to changing circumstances and multicultural skills fortified with international trajectory.

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## Teaching Experience

**Georgia Southern University** GA, USA  
Department of Physics. August, 2013 – Present  
Visiting Assistant Professor.

**Universidad Autónoma de Guerrero** Gro., México  
**Unidad Académica de Ingeniería.** February, 2013 – July, 2013  
Physics and Applied Astronomy lecturer.

**Universidad Autónoma de Guerrero** Gro., Mexico  
Course-Workshop: Physics for High School Teachers. 2012  
Trainer.

**Universidad Sentimientos de la Nación** Gro. Mexico  
Course: Research Methodology 2011  
Lecturer

- ✦ Training program for high school physics teachers qualified as “Very Good” in a follow-up opinion survey.

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## Research Experience

### University of Kentucky

Department of Physics and Astronomy,  
Postdoctoral Fellowship  
Research area: galactic dynamics, numerical simulations  
Advisor: I. Shlosman.

KY, USA  
2006-2009

### Scientific Publications

Jorge Villa-Vargas, Isaac Shlosman & Clayton Heller, 2010, *Astrophysical Journal*, 719, 1470. *Dark matter halos and evolution of bars in disk galaxies: varying gas fraction and gas spatial resolution*

Jorge Villa-Vargas, Isaac Shlosman & Clayton Heller, 2009, *Astrophysical Journal*, 707, 218. *Dark matter halos and evolution of bars in disk galaxies: collisionless models revisited*

Jorge Villa-Vargas, Isaac Shlosman & Ingo Berentzen. *Dark matter halos and evolution of bars in disk galaxies: the effect of gas in the formation and evolution of galactic bars*. In preparation.

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## Outreach Activities

### La Avispa Museo Interactivo

Designed and supervised the construction of the Astronomical Observatory.

Gro., Mexico  
2011

### La Avispa Museo Interactivo

Summer Astronomy Course for Children (25 lessons). Designer and lecturer.

Gro., Mexico  
2010

### Private initiative

Introductory Astronomy Course for teens (6 lessons).

Gro., Mexico  
2011

### Public Talks

Numerous science-popularization talks and radio broadcasts.

### Star Parties

Coordinated several star parties such as: Noche de las Estrellas (2008 & 2009, 2012), Reto México (2009, 2011 & 2013).

- ✦ The success of the Astronomy Course for Children at La Avispa Museo Interactivo catalyzed a project to build an astronomical observatory.
- ✦ Rapidly became a popular public speaker. Talks have been in high demand as evidenced from documented participations.
- ✦ Please find ample documentation of outreach activities at: [www.astronomiarecreativa.org](http://www.astronomiarecreativa.org).

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## Languages

### Spanish

Native language

### English

TOEFL exam 617 points  
(June, 2000)  
Fluent conversation and writing

### French

DELF exam, levels 1 to 4  
(July, 2001)  
Fluent conversation and writing

- ✦ Foreign language fluency has been intensively reinforced during residences abroad (3 years at U. S., 5 years at France).