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## Welcome to Cardenas's Home Page

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**Prof. Rolando Cardenas BSc, PhD**

Assistant Professor of Astrobiology and Astrophysics

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### QUALIFICATIONS

**Bachelor of Science (B.Sc):** Chemistry, [Central University of Las Villas](#), Santa Clara, Villa Clara, Cuba, 7/88

**Golden Award for Academia Results**, 7/03.

**Philosophical Doctor (Ph.D):** Physical Sciences, [Higher Institute for Nuclear Science and Technology](#), Havana City, Cuba. 7/03.

### EXPERTISE AND CURRENT WORK INTERESTS

**Teaching main interests:** My current teaching interests include the astrobiology, astrophysics and physical chemistry.

**Research main interests:** My current research interests are in the area of the influence of astrophysical phenomena on Earth's biosphere and atmosphere. This includes the action of cosmic radiation sources, such as solar flares, terrestrial and galactic gamma ray bursts, etc, on planetary atmospheres and living organisms. I am very interested in the application of graph theory, network theory and quantum chemical calculations to genomes mutated under the action of radiations, both in present and past organisms, to elucidate the potential role played by cosmic radiations on evolution.

### *Some Recent Publication...*

1. **"The genetic signature of (astronomically induced) life extinctions", *q-bio.PE/0509033***
2. "Scalar Fields and Models of the Universe", in **Proceedings of the International Workshop on Strong Magnetic Fields and Neutron Stars**. Havana, April 2003.
4. "Model of the Universe including Dark Energy accounted for by both a Quintessence Field and a (negative) Cosmological Constant", **Physical Review D**, **67**, **083501 (2003)**
5. "Thick Brane Worlds Arising From Pure Geometry", **Nuclear Physics B643 (2002) 187-200**
6. "Comments on the paper astro-ph/0103335 by C Rubano and P Scudellaro", **General Relativity and Gravitation** **34 (2002) 1877-1885**
7. "Transformations of units and the cosmological singularity" en **Proceedings of the IX Marcel Grossmann Meeting on General Relativity and Gravitation, Vol. III (World Scientific Publishing, 2002)**
9. "Brans-Dicke-type theories and avoidance of the cosmological singularity", **Physical Review D62 (2000) 044042**.