LSU LOUISIANA STATE UNIVERSITY

PHYSICS & ASTRONOMY
WEEKLY CALENDAR

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WEEKLY CALENDAR

February 23, 2009

DEPARTMENT COLLOQUIUM

"The Quark-Nova: astrophysical implications"

3:40 PM, February 26, 2009
109 Nicholson Hall

Rachid Ouyed
University of Calgary

Host: Juhan Frank/Jan Staff

• Refreshments served at 3:15 PM in 201 Nicholson Hall •

I will describe the concept of a Quark-Nova which involves the formation of quark stars, a new class of compact stars that contain matter at the highest densities in the universe (> 10^15 g/cm3). I will show how appealing to this theoretical object, much denser than a neutron star, allows for a fresh look at astrophysical mysteries that eluded us so far. In this talk, I will focus on applications to: (i) Superluminous supernoave (e.g. SN2006gy) and (ii) Gamma Ray Bursters, and discuss proposed observational features of quark-novae in this context. I will end by suggesting how Quark-Novae could shed some light on fundamental properties of Quantum-ChromoDynamics.

ANNOUNCEMENT:

Due to the **Mardi Gras** holiday the University will be closed on Tuesday, February 24, 2009. There will be no classes on Monday, February 23 through Wednesday, February 25, 2009. Classes resume on Thursday, February 26 at 7:30 am.

Publication:

"Conditional probabilities with Dirac observables and the problem of time in quantum gravity," Rodolfo Gambini, Rafael A. Porto, **Jorge Pullin** and Sebastian Torterolo, Physical Review D 79, 041501(R) (2009).