

# Weekly Calendar and News

January 23-28, 2017

202 Nicholson Hall  
Louisiana State University  
Baton Rouge, LA 70803  
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<http://www.phys.lsu.edu>

## Departmental Colloquium

### “Betelgeuse”

3:30 PM Thursday, January 26, 2017

109 Nicholson Hall

[Craig Wheeler](#)

U. Texas at Austin

Host: Manos Chatzopoulos

• Refreshments served at 3:10 PM in 232 (Library) Nicholson Hall •

Betelgeuse appears to be rotating too rapidly. We have computed a suite of models with ZAMS masses from 15 to 25  $M_{\odot}$  in intervals of 1  $M_{\odot}$  including the effects of rotation with the stellar evolutionary code MESA. Incorporating the nominal observed rotational velocity, 15 km/s, yields significantly challenging constraints. In single star models, this velocity constraint is only matched when the models first approach the base of the red supergiant branch (RSB). Models at the tip of the RSB typically rotate at only 0.1 km/s. We summarize various options to account for the rotational velocity and suggest that one possibility is that Betelgeuse merged with a companion star of about 1  $M_{\odot}$  as it ascended the RSB, in the process producing the ring structure observed at about 7' away. A past coalescence would complicate attempts to understand the evolutionary history and future of Betelgeuse. We have done preliminary asteroseismological models to constrain the internal structure and have investigated the impact on the interior structure of the accretion of about 1  $M_{\odot}$  with Keplerian angular momentum corresponding to the current radius of Betelgeuse.

## Publications

- “[Conformal loop quantum gravity coupled to the standard model](#)” by Campiglia, Gambini, and Pullin.

# LSU Physics & Astronomy in the News

- LSU Research magazine feature: [Wave of the Future - Physicists detect ripples in spacetime from the collision of two black holes.](#)
- Featured Tiger video - Tabettha Boyajian discusses “Tabby Star”:  
<https://www.youtube.com/watch?v=SrqZTZZOQWQ>
- [Annual 2017 Medical Physics Newsletter](#)

## Saturday Science

### [“The Science of Deepwater Horizon Oil Spill”](#)

[Emily Mauna-Douglass](#) from Louisiana Sea Grant College

**10-11 AM Saturday, January 28, 2017**

**Room 130 Nicholson Hall**

**Please see the attached flyer**

# SATURDAY SCIENCE

## The Science of Deepwater Horizon Oil Spill

A public lecture by  
**Dr. Emily Maung-Douglass**

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### About the Speaker

Dr. Emily Maung-Douglass is an oil spill specialist at Louisiana Sea Grant, and her work focuses on chemical evolution and breakdown of petroleum and dispersants in the environment as well as their interactions with the ecosystem.

Deepwater Horizon oil spill occurred in 2010 off the coast of Louisiana and continues to be the largest accidental release of oil on record. What have scientists discovered about the spill in the past seven years? How are scientists continuing to study the impacts of the spill and preparing for the next one?

Please join us at LSU's next Saturday Science Lecture to learn the answers to these questions and more!



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**28 January 2017, 10-11:00 a.m.**

Room 130 Nicholson Hall, LSU