Astronomy Open Night, Friday, December 2, 2016

ESS 001; 7:30 P.M.

For more information: http://www.astro.sunysb.edu/openight/opennite.html

Dr. Simone Dall'Osso

"Black Holes From Early Speculations to Modern Astrophysics"

Black holes are among the most enigmatic and fascinating celestial bodies, that we can now observe - indirectly – thanks to modern instruments able to reveal them through high-energy radiation and gravitational wave emission.

The history of the concept of "dark star" can be dated back to the physics of the XVIII century. However, a proper definition of "black holes" only became possible more than one century later, thanks to Einstein's General Theory of Relativity, although Einstein himself considered black holes as a mere mathematical oddity of his theory.

Black holes do not allow any type of information to escape their interior (the so-called "event horizon"), but their presence strongly affects matter and space-time itself in their surroundings. It is this "influence", with its very specific signatures, that our most advanced instruments can now reveal and measure in great detail.

Thanks to theoretical and observational efforts of the XX century, we now know that millions of stellar-mass black holes exist in each galaxy, and that the center of most galaxies - including our own - harbor supermassive black holes with masses millions to billion times larger than our sun. Having revealed this astonishing picture is one of the great successes of modern astrophysics.

In the last few years, the first detection of gravitational wave signals from binary black holes, and the discovery of tidal disruptions of stars by supermassive black holes, have opened up whole new ways to ``detect" black holes and to study their physics. Since these are almost unexplored paths, the future promises to be even more generous in discovery and surprises.

Dr. Simone Dall'Osso graduated in Astronomy at the University of Bologna, his hometown, and got a PhD in Astronomy at the University of Rome, specializing on the structure of ultramagnetic neutron stars (magnetars) and the mystery of their origin. Dr. Dall'Osso worked at the Astronomical Observatory of Rome and at Pisa University, broadening his interests on the physics of magnetars and their ability to emit X/gamma-rays and gravitational waves. From there Dr. Dall'Osso moved to the Hebrew University of Jerusalem and started working on Gamma-ray Bursts, the most violent explosions in the universe thought to harbor the formation of black holes in the collapse of massive stars. He also worked in Germany, at the University of Tübingen, extending his work on neutron stars and black holes as sources of X-rays and gravitational waves. In 2016 Dr. Dall'Osso joined Stony Brook, developing new approaches to study Gamma-ray Bursts, magnetars and gravitational wave sources in a unified framework.

World of Physics Open Night, Friday, December 9, 2016

ESS 001; 7:30 P.M.

For more information: http://www.physics.sunysb.edu/Physics/WorldsOfPhysics/20162017/

CANCELLED - A new date in Spring will be announced!

Directions to SUNY Stony Brook and ESS Building

⇨ From exit 62 of the Long Island Expressway (LIE, I-495) follow Nicolls Road (Route 97) north for nine miles. Pass the South and Main entrances to the University.

⇨ Enter the North entrance which will be on your left.

⇨ At the top of the small hill, turn right on Circle Road.

⇨ Proceed about 1 mile.

⇨ Turn left onto Campus Drive and then immediately turn left again onto John S. Toll Drive.

⇨ Proceed about 50 yards then turn right into the large paved parking lot.

⇨ The Earth and Space Sciences building is the large concrete building at the northeast end of the parking lot.

Map of campus is on the web at: http://www.stonybrook.edu/sb/map/

TEACHER IN SERVICE CREDITS

If your school requires you to have a sequence of educational opportunities in order to receive in-service credit, please advise them that during the Fall 2016 semester we will provide attendance certification for each of the lectures attended.

Please contact the respective department for more information.