SEMINAR IN PHYSICS

FRIDAY, April 3, 2015

3:30-4:25 · Ross 0220

~ Refreshments! ~

Formation of Planetary Systems

Caitlyn Ewald (UNC Physics student)

The quest to figure out how planetary systems form is a difficult one. The only system we know like the back of our hand, of course, is our own. However, our solar system was formed around 4.6 billion years ago so currently aids us very little. With equipment like the Hubble Telescope and others similar to it, scientists have been able to shed some light on how these systems come to be. It's a process unlike any other that involves gravity, violent mergers, and a lot of time. Although we're still not 100% sure on how it all works, we now have a very good understanding of the processes of forming planetary systems.

Superhydrophobics and Applications in Nature

Matt Svetic (UNC Physics student)

The hydrophobic effect is the observed tendency of nonpolar substances to aggregate in aqueous solution and exclude water molecules. The term hydrophobic literally translates to "water-fearing". It describes the segregation and apparent repulsion between water and nonpolar substances. Surfaces that measure a contact angle of over 150° and a roll-off angle of less than 10° are considered to be superhydrophobic. This superhydrophobic effect is also known as the "Lotus Effect", and is observed in nature on a lotus leaf, as well as with water striders and aquatic insects that spend most of their lives submerged.