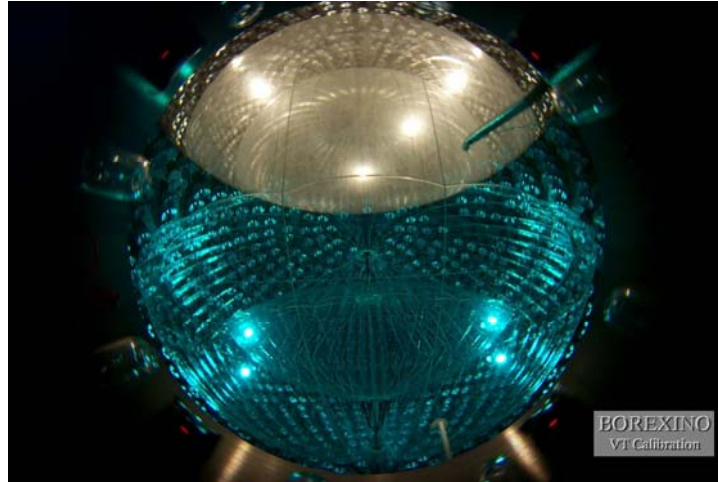


The Virginia Tech Physics Department presents the following colloquium:

Dr. Bruce Vogelaar (Virginia Tech Physics Dept.)
“Sunlight: Photons -vs- Neutrinos”



We all enjoy sunlight, but can't see the neutrinos streaming from the Sun without special detectors. While the former tells us about energy generated in the Sun 40,000 years ago, the latter only take eight minutes to get here from the center of the Sun. The luminosity of the Sun determined these two ways - via photons and via neutrinos - currently differ by 40% at one sigma. What's going on?

In trying to understand what the neutrino flux is telling us, we've discovered that neutrinos, originally thought to come in three distinct flavors, in fact oscillate from one flavor to another, an oscillation resonantly enhanced deep in the Sun by the MSW effect. However, we still have only directly measured high energy solar neutrinos: less than 90% of the solar neutrino flux.

This colloquium will describe the current situation, and the upcoming experiments designed to get at the lower-energy solar neutrinos. In particular, the Borexino and LENS experiments will be explained, including the pictures you may have seen on the walls showing Borexino being filled with water.

Friday, September 29, 2006
210 Robeson Hall
2:30 P.M. (Refreshments served at 2:15)