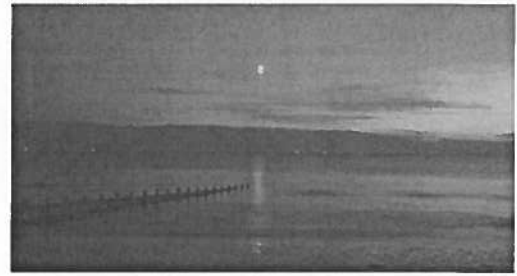




WEEKLY CALENDAR

29 November 2005

Department of Physics and Astronomy
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Baton Rouge, Louisiana 70803-4001
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Reflections of Venus, 19 Nov 2005

General Seminar

3:40PM / Thursday, 1 December 2005 / Room 109 Nicholson

Host: Dr. Jim Matthews

[Refreshments served at 3:15 PM in Room 229, Nicholson Hall]

NEUTRINO ASTRONOMY AT THE SOUTH POLE:

AMANDA - After Five Years, and

ICECUBE - The Next Five Years

Robert Morse, PhD

University of Wisconsin, Madison

Kilometer-scale neutrino detectors such as IceCube are discovery instruments covering nuclear and particle physics, cosmology and astronomy. Examples of their multidisciplinary missions include the search for the particle nature of dark matter and for additional small dimensions of space. In the end, their conceptual design is very much anchored to the observational fact that Nature produces protons and photons with energies in excess of 10^{20} and 10^{13} eV, respectively. The cosmic ray connection sets the scale of cosmic neutrino fluxes. The problem has been to develop a robust and affordable technology to build the kilometer-scale neutrino detectors required to do the science. The AMANDA telescope using clear deep Antarctic ice as a Cherenkov detector of muons and showers initiated by neutrinos of all 3 flavors, has met this challenge. We review the results obtained with more than 5000 well-reconstructed neutrinos in the 50 GeV~500 TeV energy range collected during its first 4 years of operation. More importantly, we will show that AMANDA represents a proof of concept for the ultimate kilometer-scale neutrino observatory, IceCube, now under construction.

Reminder:

There will be a Faculty Meeting on Tuesday, 6 Dec. 2005

at 3:40pm in Room 109 Nicholson.

If you are unable to attend, please remember to assign your proxy.
