

PHYSICS DEPARTMENT COLLOQUIUM

“Solving the Solar Neutrino Problem with the
Sudbury Neutrino Observatory”

BY

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A thirty year old puzzle in physics and astrophysics has been solved! Solar neutrino flavor transformations have been observed by the Sudbury Neutrino Observatory (SNO). The SNO detector contains 1000 tonnes of pure heavy water and is located in an active nickel mine near Sudbury, Canada. By observing charged-current and neutral-current neutrino-deuteron reactions, SNO measured the flux of electron neutrinos and the total flux of all active neutrino flavors from the Sun. This showed that the deficit observed by previous solar neutrino experiments is due to new neutrino properties and that solar model calculations are correct.

THURSDAY, OCTOBER 16, 2003
4:00 PM IN 102 JFB
REFRESHMENTS AT 3:30 PM IN 219 JFB