

Seeing the Unseen at Astronomy Open House

by Ryan Cannon
staff writer

An astronomy open house entitled "Neutrinos in the Universe" was held this past Thursday in the Otto Behrend Science Building. Dr. Roger Knacke, who received his B.S. and Ph.D. in physics at Berkeley, delivered his third "Open House" presentation this academic year. Assistant Professor of Physics Dr. Darren Williams prepared impressive slides which were easy to understand. The audience also enjoyed music, composed in the 1750s by astronomer William Herschel.

Neutrinos, discovered in the 1920s, are one of the smallest things in the universe. A neutrino is smaller than an atom, and the word "neutrino" actually means "little Neutral One." The first neutrino was not even seen until twenty-five years after its discovery. Neutrinos are one of the resultants whenever two protons collide. Colossal amounts of energy are involved in this collision, giving the neutrino a tremendous amount of

speed. This occurs in stars like our sun.

Neutrinos are so small and interact so little with matter that they can travel through miles and miles of lead. Matter is basically transparent to them. Although most neutrinos make it through matter, occasionally one will not. It will hit the nucleus of an atom and stop suddenly. Billions of neutrinos attack the earth and you each day. They are even present at night because they can travel directly through the earth to get to you. Dr. Knacke accurately joked, "At night, when you are sleeping, neutrinos are still hitting you." This sounds more like a Steven King novel than astronomy. He then added that some physicists actually call this event wonderful.

Since stars create neutrinos, Dr. Knacke decided to discuss stars and how they explode. Stars can be found in a range of sizes. Our sun is one hundred times wider than the earth, which is like comparing the size of a basketball and the head of a pin. The core of the sun is like a nuclear fu-

sion reactor and is an unpleasant 15 million degrees.

All stars convert hydrogen to helium. When all of the hydrogen is consumed, heat from the nuclear actions disappears. Stars then begin to burn other elements in an attempt to prolong their life. Low mass stars however cannot last long this way and collapse into tiny dead stars. When a high mass star runs out of fuel however, gravity is still there and causes the star to collapse at almost the speed of light. The star's atmosphere then bounces outward, and the star explodes in a Supernova. When a star explodes this way, it is still visible for a few months. The most recent example of this was the Supernova of 1987. But Dr. Knacke noted that this was not a reason to worry. He said that our sun will be around for the next several billion years and won't go supernova.

There are three types of neutrinos: Electron, Muon, and Tau. Each neutrino, it is believed, can change into another type of neutrino and then change back again. Neutrino de-

tection can only view Electron neutrinos, and during early experiments, this caused confusion. A test was conducted and only half of the expected number of visible neutrinos were seen. The other types of neutrinos were later discovered which accounted for the discrepancy in results.

Dr. Knacke's presentation concluded in just under an hour. Afterwards, the audience was invited to view the moon, stars, and even Venus through telescopes for the first time this year thanks to the weather. The presentation was enjoyed by the audience. James Washburn, 02 DUS, commented, "The open house was very interesting, and the knowledge that I gained in Astro 10 with Darren Williams enabled me to enjoy it even more." The final astronomy open house of 98/99 is at 7:30 on April 15 in room 101 of the Otto Behrend Science Building. All are welcome and encouraged to attend.

SGA springs into action

by Ayodele Jones
managing editor

Spring is here, and with this new season the Behrend Student Government Association has experienced some new changes. SGA's main purpose is to address student needs, and with the addition of two new Senators, the Student Government will be well on its way to accomplishing its goals. Jose Orama 04 History, is ready to serve the students. "As an SGA Senator, I am willing to be at the disposal of the students. Right now I am concentrating on making the upcoming elections a success by urging the student body to turnout and vote for their fellow classmates, candidates. Jim Buzzard 06, EE said, "Basically I have a lot of complaints with the school, and a lot of people have a lot of complaints with the school, I just want to try and solve them."

In addition to these new appointments, SGA has been relatively busy doing many things, including attempts to get a FM radio station on campus. At the current time, SGA is in the first stages of researching, the radio station would be student geared and it would employ students as disc jock-

eys, and student programming. The budget process has been consuming much of SGA's time and yet they are preparing for Spring elections for the upcoming fall semester. The elections are expected to be held on April 16.

Andrea Diplacido, vice-president of SGA, considers the co-op book sale held in January as SGA's most important accomplishment so far, "although many students did not "donate" books, the books that were donated for this purpose, were sold. We provided a good service to students, because that's what were here for." Several SGA committees are working on problems brought to them by students, the traffic appeals committee is backed up, because of an increased amount of student petitions. The Joint Residence Council is currently working with Hall Council to resolve contract submission problems with Housing and Food Services.

Unfortunately, SGA has failed to solve one problem, student participation. Diplacido notes "participation could definitely be better, we have not been successful at this so far, but we hope with the prospect of a new radio station, participation will increase.



photo by Gil Jordan

The cast of the musical *B.R.U.N.O.S.*
Leo Hanley, John Hoderny, John Hanley,
Left back:
David Grygier, Ryan Cannon, Jack Kichura



WIN! WIN! WIN!

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