

University of Nebraska-Lincoln

ASTRONOMY EDUCATION WORKSHOP

<http://astro.unl.edu>



(Saturday, November 3, 2007 — Avery 19, UNL City Campus)

This event is free to high school and college astronomy/physics instructors and undergraduate students interested in careers in science education. Please register in advance by phone at 402-472-9312 or by email at spenry2@unl.edu. This workshop has three goals: 1) to acquaint educators with innovative usages of instructional technology in astronomy education, 2) to bring together members of the astronomy and physics teaching community to share ideas and identify potential collaborators, and 3) to promote new developments in the UNL Department of Physics and Astronomy.

Workshop Agenda

9:00 Welcome

9:10 am Working with Curricular Materials: “**Gamma-Ray Burst Activities**” (Avery 13b)
Dr. Phil Plait

Abstract: The NASA Education and Public Outreach Group at Sonoma State University has developed an exciting series of four hands-on, inquiry-based activities to use in your physical science or mathematics classroom. These standards-based activities are based on gamma-ray bursts, mysterious astronomical explosions of unimaginable energy which have perplexed astronomers for 40 years. In these activities, students will use various properties of cosmic bursts to sort them into different categories; use basic geometry to determine the direction to a burst; use the burst locations in the sky to deduce their distance; and learn about how these objects focus their energy into tight beams. These activities are cross-disciplinary, fulfill requirements of many science and math standards, and they're fun for your students.

10:30 am Presentation: “**A Swift View of Gamma-Ray Bursts**” (Avery 19)
Dr. Phil Plait

Abstract: Gamma-ray bursts are titanic and very distant explosions that mark the births of black holes. Long a mystery to scientists, GRBs are now starting to be understood, but plenty of puzzles remain. Do they all signal the creation of a black hole? How can they create so much energy -- equivalent to a billion billion Suns? What would happen if one went off nearby?

NASA's Swift mission was launched into orbit on November 20, 2004, and since then has observed hundreds of GRBs. It has opened a new window on our understanding of these weird and exciting explosions. Dr. Plait, an astronomer who worked on Swift's Education and Public Outreach will give an overview of the mission and discuss what we know about GRBs.

11:30 am “A Progress Report on SEPP0” (Avery 19), Kevin Lee, Ann Langemeier & Megan Holland

12:00 pm Lunch (Selleck Hall Cafeteria — President's Room)

1:00 pm “An Introduction to Variable Stars” (Avery 19) — Ed Schmidt (UNL)

1:20 pm Computer Lab: “Analyzing Photometric Observations of Variable Stars” (Avery 12 & 16)
Ed Schmidt (UNL), Adam Davis (UNL), Chris Siedell (UNL), & Dave Kriegler (UNO)

2:40 pm “Peer Instruction over Variable Stars” (Avery 19) — Todd Young (WSC)

2:55 pm Wrap-up and door prize raffle (must be present to win!)

This workshop is sponsored by the UNL Center for Science, Mathematics, and Computer Education and the UNL Department of Physics and Astronomy. Numerous educational materials, continental breakfast, and lunch are provided and reimbursement will be made for travel costs up to \$50. The University of Nebraska-Lincoln does not discriminate based on gender, age, disability, race, color, religion, marital status, veteran's status, national or ethnic origin, or sexual orientation.

