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High Energy Education and Public Outreach

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Gamma-ray Large Area Space Telescope (GLAST)

- GLAST Burst Monitor (GBM)
- Large Area Telescope (LAT)
- Launch in Fall 2007

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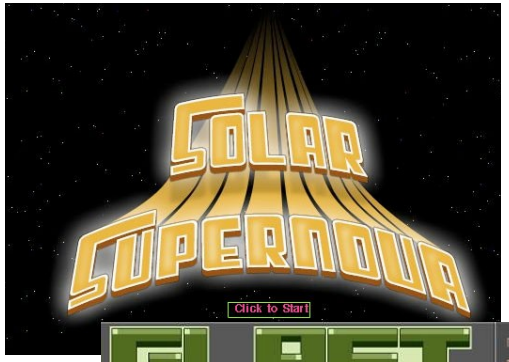
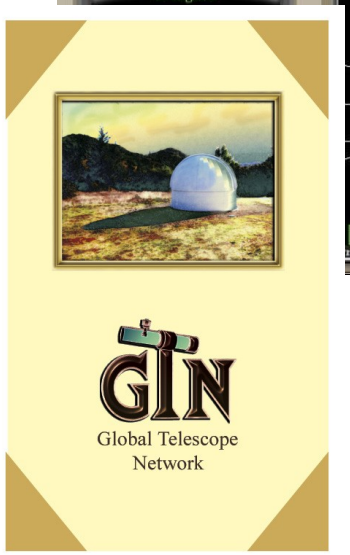
Highlights

- Web-based materials
  - http://glast.sonoma.edu
  - New Space Mystery: Solar Supernova
  - GLAST LAT Simulator
- Global Telescope Network
  - http://gtn.sonoma.edu
  - Robotic observatory in partnership with California Academy of Sciences





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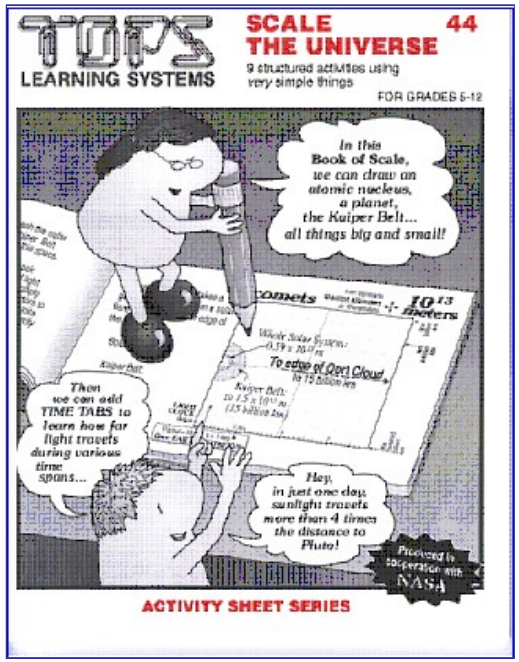
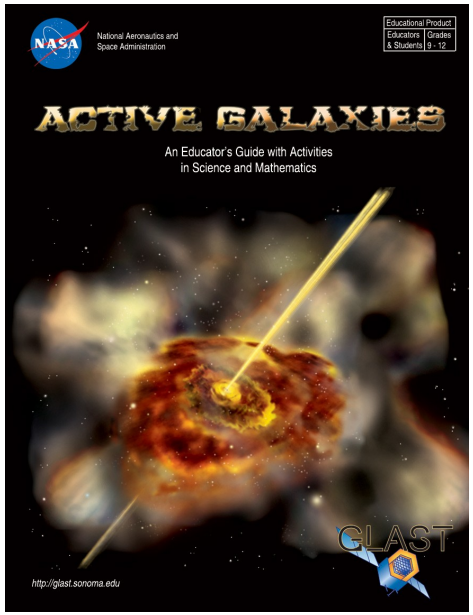
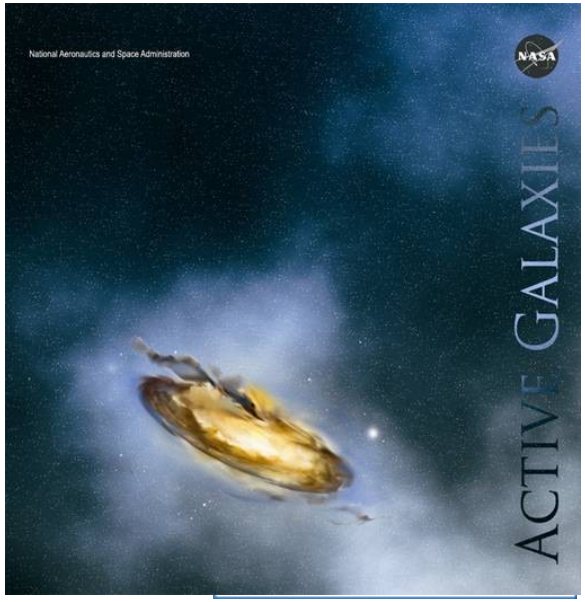
Highlights

- Printed materials
  - 3 TOPS curriculum guides
  - Active Galaxy wallsheet and educator's guide
  - Active Galaxy Pop-up book for younger kids

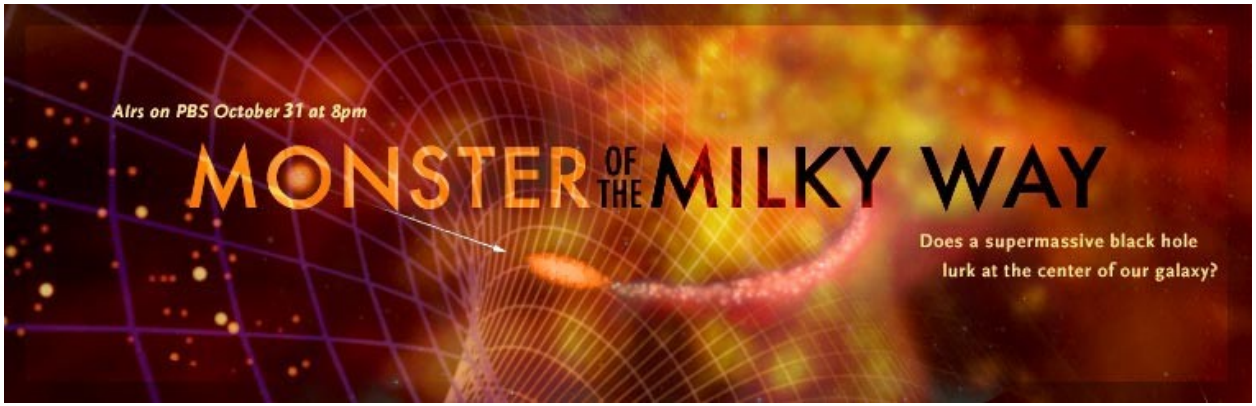


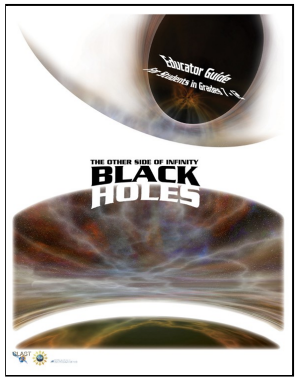




Highlights

- PBS NOVA “Monster of the Milky Way”
  - Premiered 10/31/06 http://www.pbs.org/wgbh/nova/blackhole
  - Seeded with GLAST E/PO funds
  - Features HD simulations of black holes
  - “Black Holes: The Other Side of Infinity” planetarium show at the Denver Museum of Nature & Science and many others
  - Educator’s guide to accompany both television and planetarium shows





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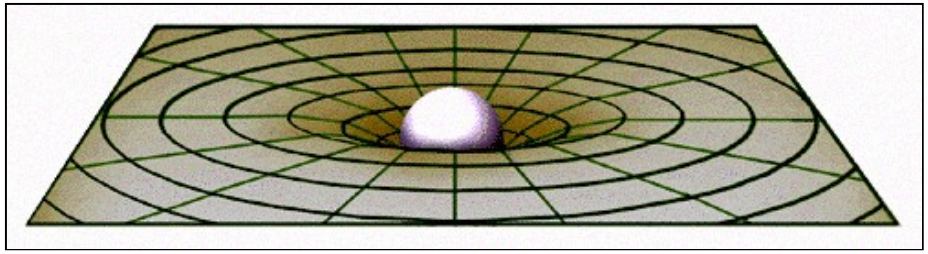
Black Hole Space Warp

Using ordinary supplies to discuss and discover abstract science concepts.



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GLAST

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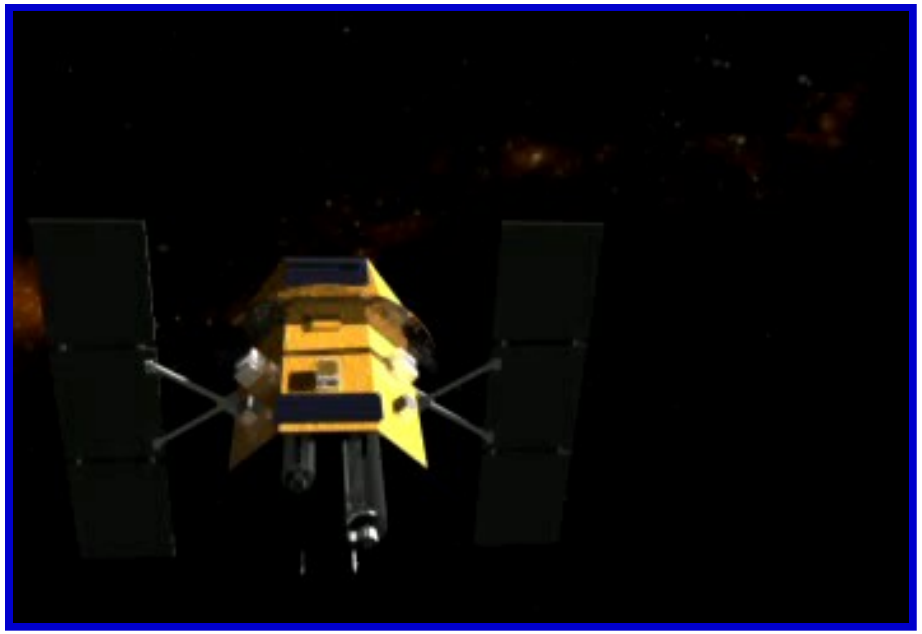
Black Hole Space Warp

In groups

- Group members must hold the hoop horizontally.
- Place the weight at the center of the hoop. (what does this represent?)
- Have two people slowly toss in the bouncy balls one at a time. Toss them so that they are near the edge of the hoop when you release them.
- Observe what happens to the path and the speed of the balls.
- Repeat

Swift GRB Mission

- Studies Gamma-Ray Bursts with a “swift” response
- Launched 11/20/04



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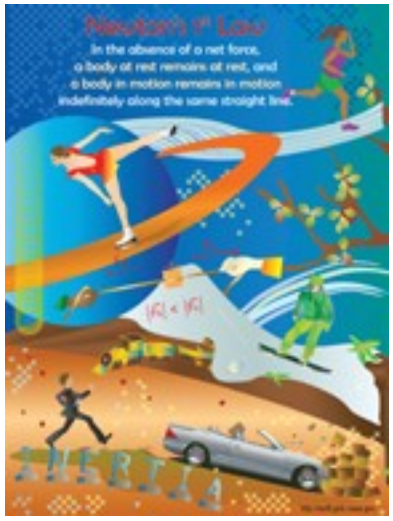
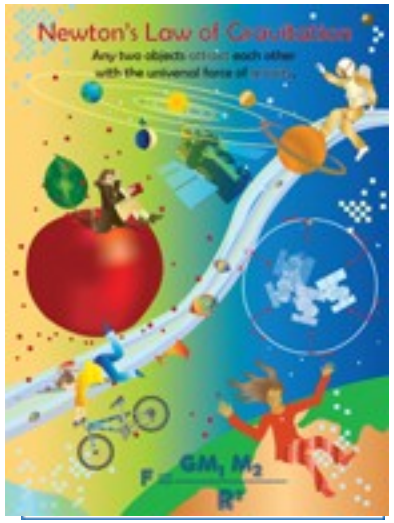
Highlights

- Web-based materials
  - http://swift.sonoma.edu
  - Interactive skymap of GRBs http://grb.sonoma.edu
- Printed materials
  - GEMS Invisible Universe guide
  - GRB wallsheet and educator's guide
  - Swift model booklet
  - Newton's Laws poster and activity set





The Cosmic Zoo

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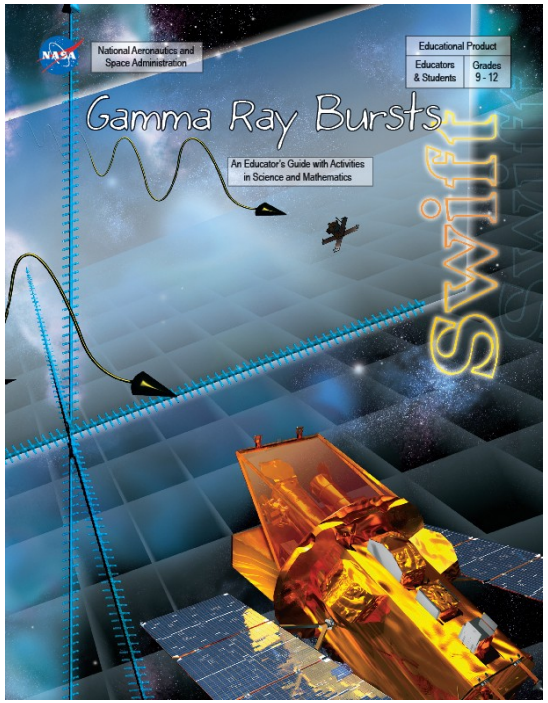
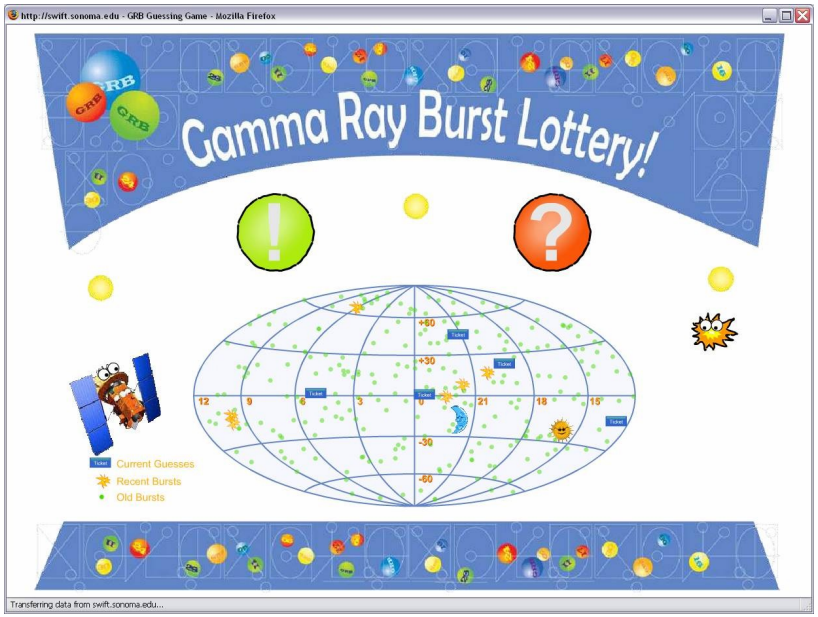
Using real science data to encourage students to think scientifically





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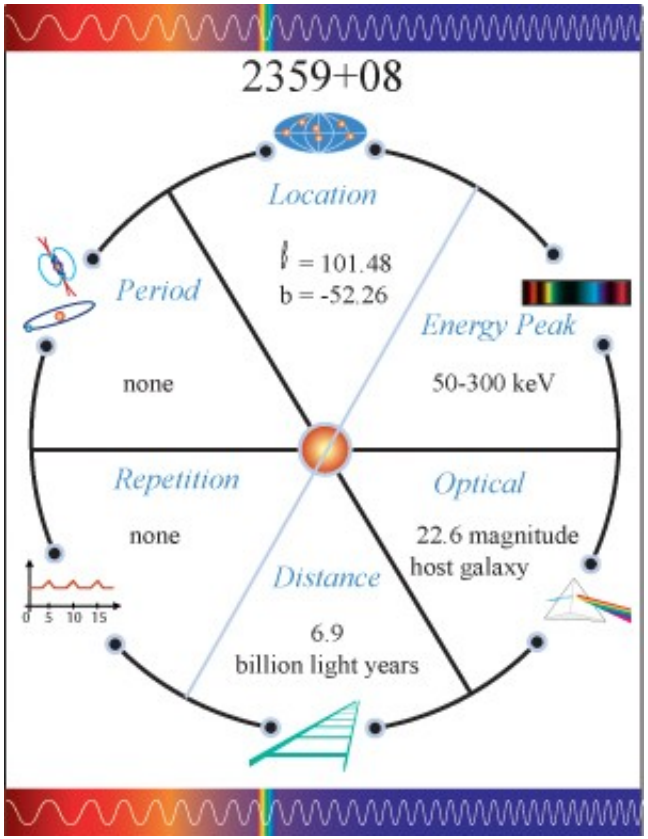
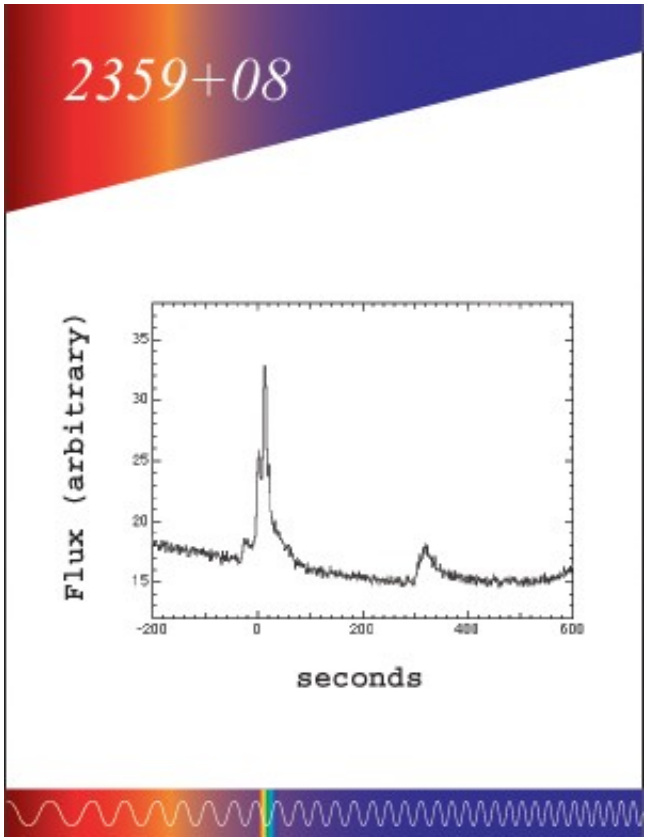
Pick a Card…





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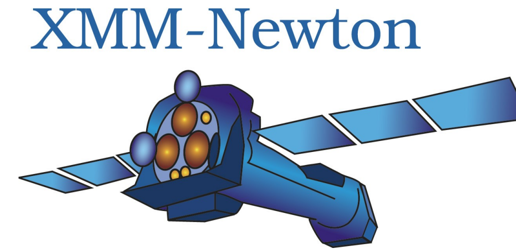
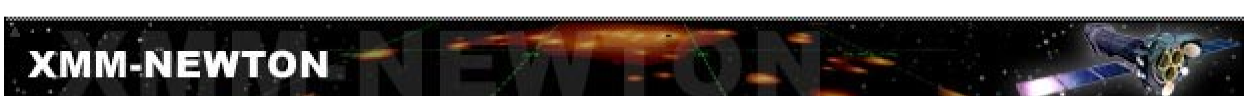
The Terrestrial Zoo

X-ray Multi-Mirror - Newton



- Launched in December, 1999
- European Space Agency mission with NASA instruments and Guest Observers
- Large X-ray focusing mirror assembly
- High throughput X-ray spectroscopy



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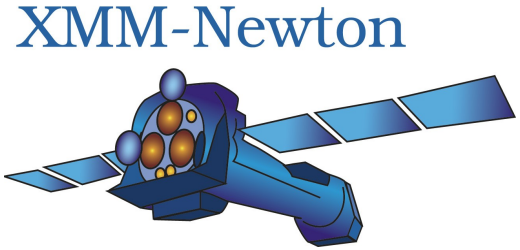
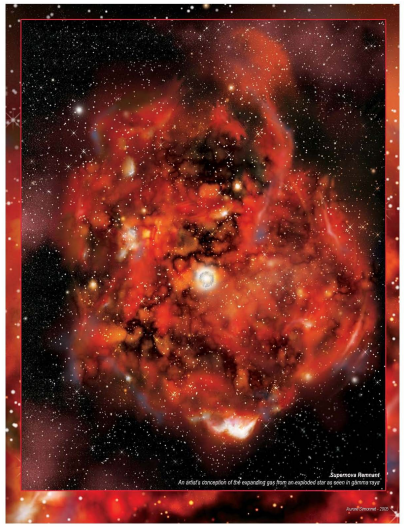
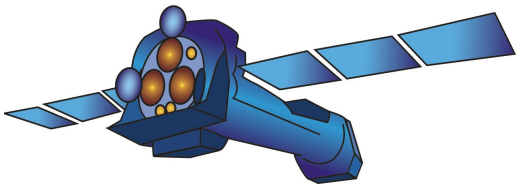


- Web-based materials
  - http://xmm.sonoma.edu
  - CLEA Lab: “Dying Stars and the Birth of the Elements”
- Supernova educator’s guide in review
- Black Hole Space Rescue Game for younger kids (in both English and Spanish)
  http://spaceplace.jpl.nasa.gov/en/kids/blackhole/game.shtml
  http://spaceplace.jpl.nasa.gov/sp/kids/blackhole/index.shtml

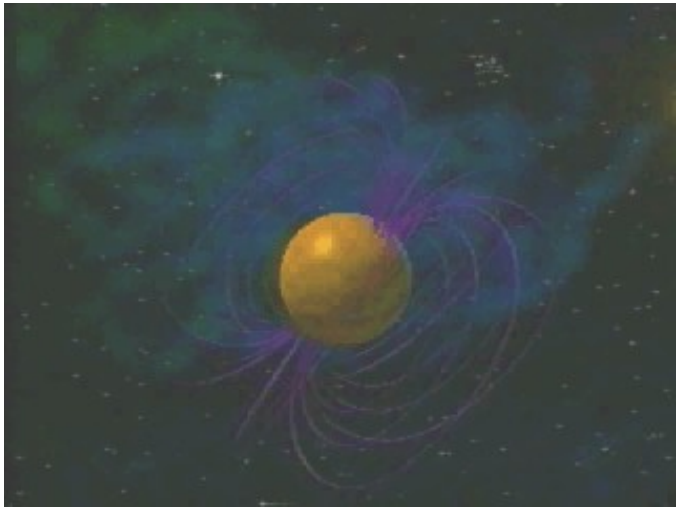


Magnetic Globe

XMM-Newton



Bringing complicated astrophysical concepts down to Earth



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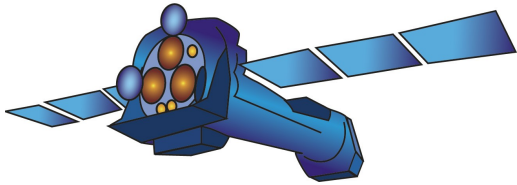
Magnetic Globe Demo

XMM-Newton



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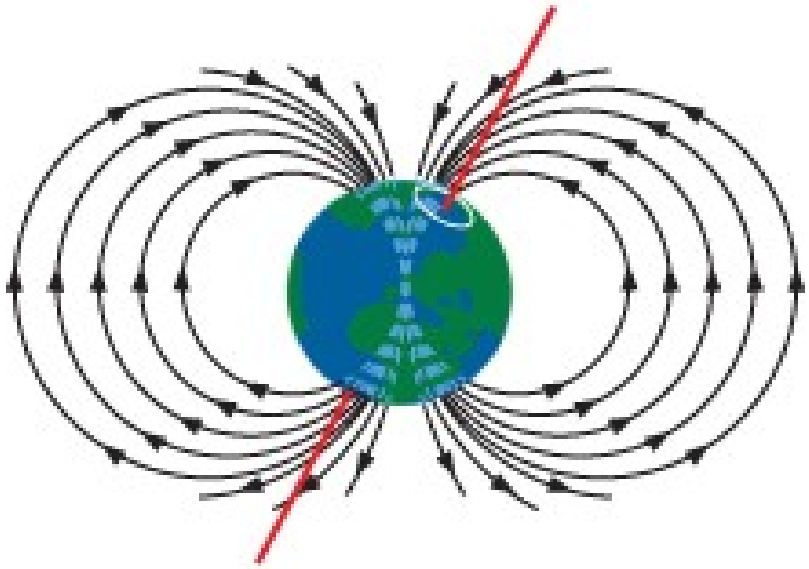
North geographic pole
South *magnetic pole*



South geographic pole
North *magnetic pole*

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Educator Ambassadors

Summer training July 2006

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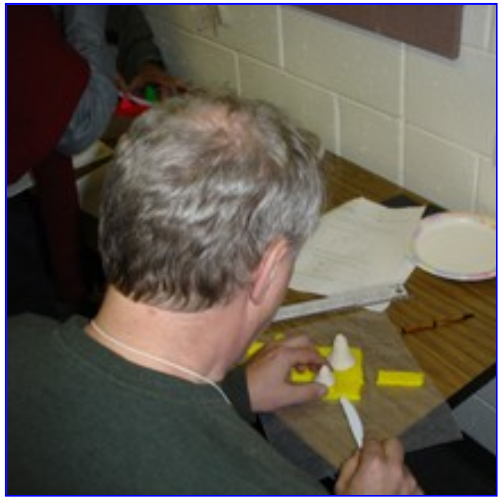
Highlights

- 19 Astrophysics Educator Ambassadors
- Master teachers who help review, test and disseminate Astrophysics E/PO materials
- Trained every other year at SSU
- Have trained over 35,000 teachers in workshops at national, regional and state conferences



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Conclusions

- The most successful E/PO is inquiry-based and engages the audience
- We have tried to model this approach in today's talk – and we have lots more activities for students, teachers, and the general public
- We are happy to share any of our ideas and materials with you and to work with you on future projects!

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For more information:

- http://epo.sonoma.edu
- http://glast.sonoma.edu
- http://swift.sonoma.edu
- http://xmm.sonoma.edu
- http://mystery.sonoma.edu
- http://grb.sonoma.edu
- http://gtn.sonoma.edu

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