



WebSights

Dan MacIsaac, Column Editor

Physics Department, SUNY-Buffalo State College,
Buffalo, NY 14222; macisadl@buffalostate.edu

WebSights features reviews of select sites presenting physics teaching strategies, as well as shorter announcements of sites of interest to physics teachers. All sites are copyrighted by their authors. This column is available as a web page at <http://PhysicsEd.BuffaloState.Edu/pubs/WebSights>. If you have successfully used a site to teach physics that you feel is outstanding and appropriate for *WebSights*, please email me the URL and describe how you use it to teach. The person submitting the best site monthly will receive a T-shirt.

Measurement Uncertainty “Error Calculator:”

<http://physics.gac.edu/%7Ehuber/error%5Fcalc/>

Tom Huber has developed a freely downloadable windows calculator for propagating uncertainties in calculations. His GNU program “...does error calculations, weighted averages, tails of Gaussians, and similar analysis chores.”

Submitted by Tom Huber of the Gustavus Adolphus College Physics Department, St Peter, MN

DOI: 10.1119/1.2981301

New Resources at the Astronomical Society of the Pacific Website

Guide on Women and Astronomy: An updated, expanded resource guide to the role women have played and are playing in the development of astronomy is now available on the website of the nonprofit Astronomical Society of the Pacific: http://www.astrosociety.org/education/resources/womenast_bib.html *Podcasts of Twelve Public Lectures by Noted Astronomers:* Audio recordings of 12 public lectures by noted astronomers are now available as free MP3 downloads at the website of the nonprofit Astronomical Society of the Pacific (ASP): <http://www.astrosociety.org/education/podcast/index.html>

Submitted by Andrew Fraknoi, Chair, Astronomy Program, Foothill College, CA.

DOI: 10.1119/1.2981302

New Physics and Astronomy songs online:

The recent reclassification of Pluto provides a useful example for discussions of the role of canonical fact in the Nature of Science in the classroom. Jeffrey Mondak writes: *I previously posted a song, “Pluto’s Not a Planet Anymore,” that has ended up receiving a great deal of classroom use. I have a new one, “Laying Down the Laws of Motion,” that also may be of interest to physics teachers and faculty. Please feel free to share these links; both songs are on the Songramp music site:*

Pluto: <http://www.songramp.com/mod/mps/viewtrack.php?trackid=49124>

Laws of Motion: <http://www.songramp.com/mod/mps/viewtrack.php?trackid=66355>

Submitted by Jeffery Mondak, James M. Benson Chair, University of Illinois

DOI: 10.1119/1.2981303

Understanding Exponential Growth and e : activities and videos

A video on exponential functions and human population growth by Dr. Bartlett on exponentials in two parts is available at <http://dandelionsalad.wordpress.com/2007/12/23/the-most-important-video-youll-ever-see-videos-parts-1-4/> and <http://dandelionsalad.wordpress.com/2007/12/23/the-most-important-video-you%E2%80%99ll-ever-see-videos-parts-5-8/>. A description of low-cost activities examples for teaching about exponential growth including rice grains on a chessboard, folding paper and two video examples showing examples of the suddenness of change the rate of change in time at <http://jzimba.blogspot.com/2007/05/understanding-exponential-growth.html>. Finally, an intuitive financial example using compound interest leading to the definition of e as an asymptotic limit (our students often find mathematics more accessible when coached in terms of money) can be viewed at: <http://betterexplained.com/articles/an-intuitive-guide-to-exponential-functions-e/>. Understanding exponential change has important social consequences (e.g economic change, resource scarcity, and climate change) as well as our standard physics topics (capacitor charging and discharging, radioactive decay, temperature changes, etc.). The study of natural and social phenomena with the characteristics of slow gradual change over an extended period followed by extreme change in a short interval is a quite important topic to us all.

Submitted by David Rheam, Math Teacher at Pavilion Central H.S., NY

DOI: 10.1119/1.2981304