

Abstract Submitted  
for the CAL09 Meeting of  
The American Physical Society

**An Educational Look at an alternative to the Expanding Universe**

**Model** RICHARD KRISKE, University of Minnesota — The author often toys with an alternative view to the expanding universe model and believes it would be a good way to teach the Scientific method. In the author's (R.M. Kriske) model the red shift is a result of magnifying the horizon of a 4 dimensional surface. On a two dimensional surface such as the earth the horizon is not magnifiable since things on the surface naturally tilt away from the observer in every direction and everything is transformed into a curved line (the Horizon) (the students can verify this as a globe can be used with some pins in it-for example). Likewise one would expect this signature of curvature to show up on three curved space dimensions, and instead of pins, a perpendicular time dimension. As the observer looks toward the pins they tilt away from him/her and in four dimensions this means they are accelerating away from him/her even though the globe is standing still. At each point a pair is being produced with its attendant gamma ray emission, but the points are of course seen as accelerating away, simply due to the curvature of the globe and nothing else, resulting in a red shift. This author produced model has never been suggested before and never presented to the Scientific community. The students would then need to compare this to the current simpler model that point sources accelerating away from the observer undergo a redshift due to the Doppler Effect. The Students would then have to review these models and determine the size of the globe for the amount of red shift seen from the two competing models. One model has a cut-off mode, since the pins not only tip backward in the curved space model but are also cut off. How does this cut-off show up, is it simply dimming, and can an experiment be done for it? The last step of this exercise is to see if one could tell the difference between these models, and if a mixed model is better, since the Globe could also be expanding (Of course the instructor could also ask what the result would be if the globe were contracting).

Richard Kriske  
University of Minnesota

Date submitted: 03 Sep 2009

Electronic form version 1.4