

Abstract Submitted
for the APR05 Meeting of
The American Physical Society

Possible Approaches to Measuring the Distance-Redshift Relation via Gravitational Lensing PAUL STANKUS, Oak Ridge National Laboratory — The primary evidence for an accelerating Universe, currently, is found in the departure from the Hubble relation for distance vs redshift as measured in distant supernovae. These methods rely on knowing the intrinsic luminosities of ancient supernovae, and while there is no reason to doubt them it is clearly desirable to have alternate measurements of the distance-redshift relation which do not involve luminosities. Gravitational lensing of distant galaxies may afford such a measurement. Outlines for two possible approaches are described: (1) Strong lensing of CMB anisotropies in coincidence with strong lensing of a distant galaxy; (2) Statistical correlation of weak lensing signatures with redshift. Feasibility using current and future instruments are briefly discussed.

Paul Stankus
Oak Ridge National Laboratory

Date submitted: 14 Jan 2005

Electronic form version 1.4