

INTERGALACTIC EXTINCTION

BRADLEY MILLS, AIGEN LI, AND LACEY DANIELS

University of Missouri

The apparent systematic dimming of high-redshift Type Ia supernovae has been interpreted as evidence of acceleration in the cosmological expansion of the universe. An alternative hypothesis to this interpretation is the gray extinction of intergalactic dust. Based on the intergalactic abundances of the dust-forming elements (C/H, O/H, Si/H, Mg/H and Fe/H), assuming these heavy elements all condensed to make dust of various composition and sizes, we place upper limits on the intergalactic extinction with various dust species and mixtures taken into account. We then examine the dimming of distant cosmological sources by intergalactic dust and aim at addressing such a question: to what extent the intergalactic obscuration affects the accelerating universe hypothesis?