

Abstract Submitted
for the DAMOP13 Meeting of
The American Physical Society

Not only Gravitational Lensing, but in general Medium Lensing

FLORENTIN SMARANDACHE, University of New Mexico — According to the General Theory of Relativity the gravity curves the spacetime and everything over there follows a curved path. The space being curved near massive cosmic bodies is just a metaphor, not a fact. We dought that gravity is only geometry. The deflection of light (**Gravitational Lensing**) near massive cosmic bodies is not due because of a “curved space”, but because of the medium composition (medium that could be formed by waves, particles, plasma, dust, gaseous, fluids, solids, etc.), to the medium density, medium heterogeneity, and to the electromagnetic and gravitational fields contained in that medium that light passes through. This medium deviates the light direction, because of the interactions of photons with other particles. The space is not empty; it has various nebulae and fields and corpuscles, etc. Light bends not only because of the gravity but also because of the medium gradient and refraction index, similarly as light bends when it leaves or enters a liquid, a plastic, a glass, or a quartz. The inhomogeneous medium may act as an optical lens such that its refractive index varies in a fashion, alike the *Gradient-Index Lens*. We talk about a **Medium Lensing**, which means that photons interact with other particles in the medium. For example, the interaction between a photon of electromagnetic radiation with a charged particle (let’s say with a free electron), which is known as *Compton Effect*, produces an increase in the photon’s wavelength. In the *Inverse Compton Effect* the low-energy photons gain energy because they were scattered by much-higher energy free electrons.

Florentin Smarandache
University of New Mexico

Date submitted: 06 Feb 2013

Electronic form version 1.4