APPENDIX A

Index of Refraction of U-Waves vs. of Light

The traditional modern physics treatment of the index of refraction has no knowledge of the underlying U-wave basis of the light propagation that the index of refraction treats. The traditional index is a composite of the refracting material's affect on the U-waves [the slowing affect of direct encounters of the material's U-waves and the U-waves carrying the light] and the refracting material's electrons' interaction with the light's electromagnetic field.

Based on the various indexes of refraction for various kinds of glass and the index variation with the wavelength of the light passing through them, about *5%* or less [depending on the particular material] of the index of refraction, *n*, is the variation of *n vs. frequency*, that due to the light's electromagnetic interaction with the atomic electrons of the material the light passes through.

In Figure A-1, below, the variations vs. frequency are parallel and increase in range with glass type approximately in proportion to glass density. The overall levels are also proportional to glass density. The range of the variation vs. frequency is about

1.500 – 1.475 = 0.025 out of *1.5*

to about

1.800 – 1.720 = 0.080 out of *1.8*

or about *4%* to *5%* of the total.

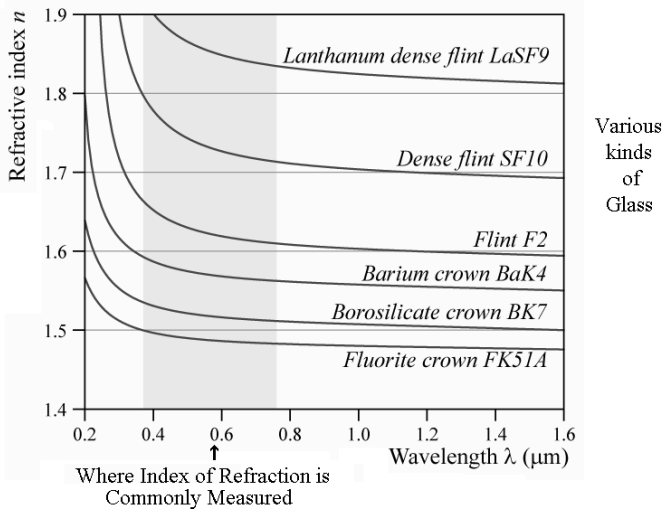

Figure A-1
Index of Refraction vs. Wavelength, Frequency
[Wikipedia, "Index of Refraction"]

The figure would indicate that about the remaining *95%* of the index is due to the frequency-independent action of the material on the U-waves carrying the light.

However, the index of refraction relationship to U-wave propagation depends on the U-wave slowing interaction of U-waves propagations encountering each other as described in equation *(2-1)* and its related and following text of Section 2.

As developed in *Appendix B, Relative U-wave Concentrations: Earth Surface Objects vs. Earth Gravitational Field*, the medium flow concentration of gravitation at the Earth's surface is so immensely greater than the ambient flow in local matter that no useful slowing of the Earth's gravitational flow can be directly effected by a reasonable amount of matter. Put in other terms, the index of refraction of the Earth's gravitational U-wave flow remains unchanged for practical purposes regardless of the local matter or

empty space through which it passes because their ambient U-wave concentration is so minute compared to that of Earth's gravity.

That is, unless some alternative configuration that increases the effectiveness of the ambient U-wave concentration in local matter can be found, as further on in Section 2.

In that regard the analysis of *Index of Refraction of U-Waves* in *Appendix A* is irrelevant. Such determinations of index of refraction are of Earth surface objects involving minute U-wave concentrations relative to Earth's gravitational field and do not indicate a capability to refract the much greater U-wave concentration of Earth's gravity.