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Antimatter May be a Form of Dark Matter WALTON PERKINS, Retired — Two observed properties of dark matter are that it does not emit light (that we can detect) and it does not reflect ordinary light. A comparison of the elementary and composite photon theories shows that they are very similar with each theory having advantages in some areas. The major difference is that in the composite theory the antiphoton is different than the photon. While the composite photon is formed of a left-handed electron neutrino and a right-handed electron antineutrino, the antiphoton is formed of a right-handed electron neutrino and a left-handed electron antineutrino. The neutrino and antineutrino of the antiphoton have the wrong helicity to interact with ordinary matter because the weak interaction is V – A. The only interaction of such neutrinos with matter would be through gravity. In a symmetric manner the neutrino and antineutrino of the photon have the wrong helicity to interact with antimatter where the weak interaction is V + A. Thus, we could not detect light from antimatter galaxies, and ordinary photons would pass through antimatter galaxies without interaction. These predictions of the composite photon theory will be tested in the upcoming ALPHA and ASACUSA antihydrogen experiments. The matter-antimatter asymmetry puzzle could be solved if the universe contains an equal amount of matter and antimatter. Antimatter galaxies may not have been observed because their antiphotons are not detectable. However, the presence of antimatter equal to matter in the universe cannot explain all the observed effects of dark matter.

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