The weightlessness of photons in a local system of reference, the cross sections for the plasma redshift, and the Raman scattering on the plasma frequency ARI BRYNJOLFSSON, Applied Radiation Industries, Wayland, MA — The weightlessness of photons in the local system of reference (repulsion in a distant system of reference) and the two cross sections change in a fundamental way the cosmological perspective. Many experiments have verified these effects. But due to their revolutionary consequences, many physicists are reluctant to believe them. I propose therefore that the experiments discussed in section 7 of arXiv:astro-ph/0401420 be funded and carried out by independent scientists. The weightlessness of photon experiments are more costly, but measuring the plasma redshift of optical star-light penetrating the solar corona during solar eclipse is possible with the existing equipment of many observatories. The redshifts decrease with the distance from the solar center. For $R/R_0 = 1.1, 1.4, \text{ and } 2.0$, from the solar center, the additional redshifts will be 2.6, 1.4, and 0.4 in parts per million, respectively. Every line from each star will be redshifted by the same amount. For better accuracy, we can compare their redshifts against lines formed in the Earth’s atmosphere.