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Raman's Classical Theory of the Compton Effect JAMES ESPINOSA[1], Rhodes College, JAMES WOODYARD, West Texas State University — The Compton effect is one of the key experiments that convinced physicists to accept the photon concept. One of the few notable dissenters was C.V. Raman. After a brief overview of his life, we will describe the physical model that he used to reproduce the Compton formula for scattering. It combines a quasi-free electronic atomic model with classical wave principles. We will show the theory predicts two kinds of radiation from this atom when a light wave interacts with it. One of them will be determined by the motion of the electrons and will produce the Compton scattering predicted by quantum theory. We will slightly modify his argument to make it compatible with an earlier work by Hugh Callendar that described Blackbody radiation classically, demonstrating that the photon concept is not needed to explain Compton's experiment.

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