Abstract Submitted
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The December, 1931 absorption experiments by Irene and Fredrick Joliot-Curie using Po Be, PoB and PoLi sources to study penetrating radiation STEPHEN SHAFROTH, Department of Physics and Astronomy, University of NC at Chapel Hill — The December, 1931 absorption experiments by Irene and Fredrick Joliot-Curie using Po Be, PoB and PoLi sources to study penetrating radiation S.M. Shafroth, Physics and Astronomy Department, University of North Carolina at Chapel Hill 27599-3255, shafroth@physics.unc.edu. The experimental arrangement including the Hoffman electroscope radiation detector and samples of the raw data are shown.[1] The emitted neutrons were interpreted as very high energy penetrating gammas. The exponential decay of detected radiation with thicknesses of Pb from 1.5- 5 cm are shown. I. Curie concludes, based on current knowledge of absorption coefficients vs gamma energy, that the gamma energy from PoBe was 15-20 MeV. However cloud chamber experiments had shown that the "penetrating radiation" could eject protons from paraffin with energies of 4.5 and 2 MeV in the case of Be and B respectively. If the ejection mechanism were the Compton effect, the gamma energies had to be 50 and 35 MeV respectively. Finally they conclude that the discrepancy in gamma energies could be "due to the uncertainties."

1. Comptes Rendus de l'Academie des Sciences, Séance du 28 Decembre 1931

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