B. Inferences from the properties of electrons

1. Atoms are neutral, so there must be positive charges to balance the negatives.

2. Electrons have little mass, so atoms must contain other particles that account for most of the mass.

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II. The Nucleus

A. The Rutherford Experiment (1911)

1. Alpha particles (helium nuclei) fired at a thin sheet of gold

a. Assumed that the positively charged particles were bounced back if they approached a positively charged atomic nucleus head-on (Like charges repel one another)

 2. Very few particles were greatly deflected back from the gold sheet.

a. Nucleus is very small, dense and positively charged.

b. Most of the atom is empty space.

