

97. The fraction is

$$\frac{\pi R_e^2}{4\pi d_{es}^2} = \frac{1}{4} \left(\frac{6.37 \times 10^6 \text{ m}}{1.50 \times 10^{11} \text{ m}} \right)^2 = 4.51 \times 10^{-10} .$$