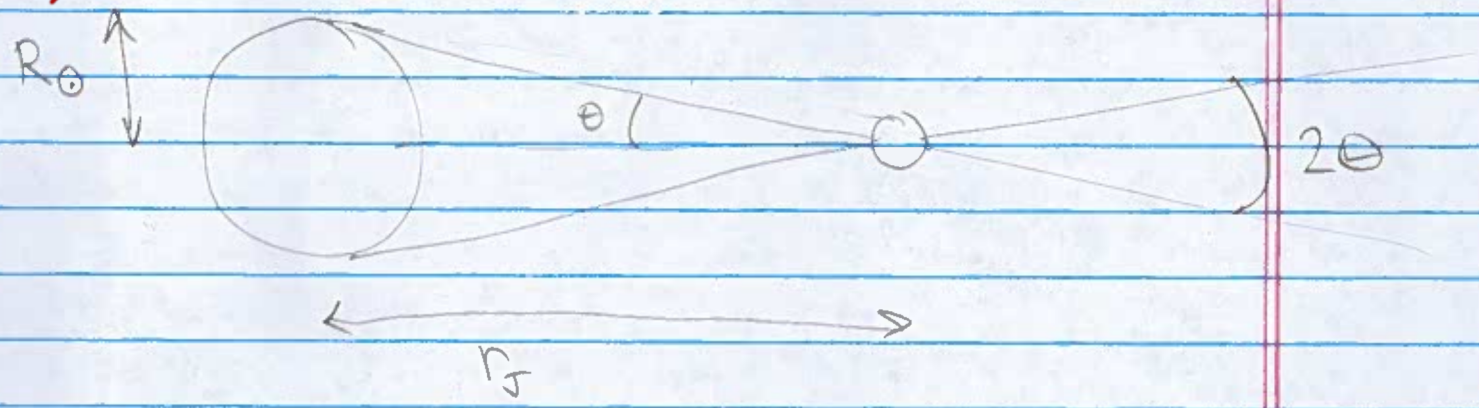
Prob of transit of Jup

Note: it is slightly more accurate to include the radius of the Sun PLUS the radius of the planet here



$$\theta = \operatorname{atan}\left(\frac{R_\odot}{r_J}\right) = \operatorname{atan}\left(\frac{6.95\times10^8\,m}{778.5\times10^9\,m}\right) = 8.9\times10^{-4}\,rad$$
$$= 0.0511\,deg$$

So probability alien lies within band of height $2\theta = 0.102°$ is

$$Prob = \frac{0.102°}{180°} = 0.00056 = 0.056\%$$
$$= \frac{1}{1786}$$