

	distance	Illumination	ratio (new/original)
d	10	4400	N/A
2d	20	1000	$\frac{1000}{4400} \approx \frac{1}{4}$
3d	30	450	$\frac{450}{4400} \approx \frac{1}{9}$
4d	40	250	$\frac{250}{4400} \approx \frac{1}{16}$

Newton's Law of Universal Gravitation

$$F = \frac{G m_1 m_2}{r^2}$$

$$a_g = \frac{G m_1}{r^2}$$

$$\frac{1}{3} r \quad 9g \quad 88.3 \text{ m/s}^2$$

$$\frac{1}{\left(\frac{1}{3}\right)^2} = 9$$

$$3r \quad \frac{1}{9}g \quad 1.09 \text{ m/s}^2$$