

Celestial Body Constant

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Definition: "Energy neither be created nor be destroyed, but one form of energy can be transformed into another form of energy".

$$E = m_1 c^2 = m_2 G h [E = E_1 = PE_2]$$

$$E_1 = m_1 c^2 (\text{space}) E$$

E_1 = kinetic energy of the body

M_1 = realistic mass of the body

C^2 = speed of light squared in space

$$PE_2 = m_2 G h (\text{Earth})$$

M_2 = mass of the object

G = universal gravitational constant

$$= 6.67 \times 10^{-11} \text{ m}^3/\text{kg} \cdot \text{s}^2$$

H = height in meters

$$E = E_1 = PE_2$$

$$E = m_1 c^2 = m_2 G h [m_1 = m_2 = 1 \text{ kg}]$$

$$E = c^2 = G h$$

$$E = (3 \times 10^8 \text{ m/s})^2 = 6.67 \times 10^{-11} \text{ m}^3 \cdot \text{m}/\text{kg} \cdot \text{s}^2$$

$$E = 9 \times 10^{64} \text{ m}^2/\text{s}^2 = 6.67 \times 10^{-11} \text{ m}^4/\text{kg} \cdot \text{s}^2$$

$$E = 9 \times 10^{64} \text{ kg}/6.67 \times 10^{-11} \text{ m}^2$$

$$1 \text{ J} = 9 \times 10^{64} \text{ kg}/6.67 \times 10^{-11} \text{ m}^2$$

$$\text{Kg} \cdot \text{m}^2/\text{s}^2 = 1.3493 \times 10^{75} \text{ kg}/\text{m}^2$$

CELESTIAL BODY CONSTANT = $1.3493 \times 10^{75} \text{ s}^2/\text{m}^4$
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