

🤪🤪 HOLD UP MY FRIENDS !!

I am here with more discoveries!

Remember the Equation of Universal Law of Gravitation?

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

F is force, G is Gravitational Constant, m_1 is mass of body 1, and m_2 is the mass of body 2. r is the distance between them. The value of the gravitational constant is the same throughout the universe, that is **$6.67408 \times 10^{-11} \text{ N m}^2 \text{ kg}^{-2}$**

Now, Let's calculate the force exerted by Uranus on me.

My Weight is about 65 kg, and my mass is 6.63 which is 65 divided by 9.8 (Mass is Weight divided by Acceleration, Here 9.8 is acceleration of g that is being exerted on me from Earth)

The Mass of Uranus is $8.681 \times 10^{25} \text{ kg}$ (damn uranus so big and heavy than me)

and it is $2.6 \times 10^9 \text{ km}$ away from us, that's the value of r .

putting all of them in the equation, we get:

$$F = 6.67 \times 10^{-11} \frac{6.63 \times 8.681 \times 10^{25}}{(2.6 \times 10^9)^2}$$

$$F = 6.67 \times 10^{-11} \frac{6.63 \times 8.681 \times 10^{25}}{5.1076 \times 10^{18}}$$

$$F = \frac{6.67 \times 6.63 \times 8.681 \times 10^{14}}{5.1076 \times 10^{18}}$$

$$F = \frac{6.67 \times 6.63 \times 8.681}{5.1076 \times 10^4}$$

$$F = \frac{383.89}{5.1076 \times 10^4}$$

$$F = \frac{75.16}{10^4} = 7.516 \times 10^{-5}$$

so the force uranus exerts on me is about 7.516×10^{-5} Newtons.

and if we do a per kg comparison, we divide the force by my mass, so

$$1.134 \times 10^{-5} N/kg$$

and that's kg in mass! not in weight.

also, earth exerts about 9.8 N/kg force on us.

And it would take about 865,000 Identical Weight Uranus(s), in a 2.6 Billion km Radius around us, to exert the same Force that the Earth does.

Do me a favour, put a paper clip on your head. felt anything? like some force being exerted on you? something pressing your head? now break the paper clip into 133,000 parts evenly and place one on your head.

that's exactly the force that Uranus exerts on you.