

# Evidence that denies universal gravitation

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## Abstract

Start from denying universal gravitation...

### 1. Experimental scheme

Suppose two shots are suspending in the International Space Station, one weighing 100 kg and the other 500 g. Move the two shots to a center-to-center distance of 0.2 m (from the large shot's center to the small shot's center). Then along the tangent direction to the large shot's center, push the small shot slightly so it gets an appropriate initial velocity, which is its linear velocity to revolve around the large shot.

### 2 Objectives

To observe how the small shot moves. Will it revolve around the large shot just like a celestial body?

### 3 Theoretic analysis

#### 3.1 The velocity at which the small shot revolves around the large shot

We should first calculate at the center-to-center distance of 0.2 m, what a velocity the small shot needs so it can revolve around the large shot?

Based on Newton's Formula of Universal Gravitation, we can get:

$$MG=4\pi^2C \dots\dots\dots \textcircled{1}$$

(The C is Kepler's constant)

Then substitute  $MG=4\pi^2C$  into  $F=G\frac{M\cdot m}{R^2}$ , then:

$$F=\frac{4\pi^2C\cdot m}{R^2}$$

$$m\cdot a=\frac{4\pi^2C\cdot m}{R^2}$$

$$m\cdot \frac{V^2}{R}=\frac{4\pi^2C\cdot m}{R^2}$$

$$V^2\cdot R=4\pi^2C \dots\dots\dots ②$$

Combine equations ① and ②, then:

$$MG=V^2\cdot R$$

$$V^2=\frac{MG}{R}=\frac{100\times 6.67\times 10^{-11}}{0.2}=3335\times 10^{-11} \text{ (m}^2/\text{s}^2\text{)}$$

$$V=0.00018261982 \text{ (m/s)}=0.18261982 \text{ (mm/s)}$$

According to Newton's Formula of Universal Gravitation, therefore, at the center-to-center distance of 0.2 m, the small shot will revolve around the large shot at a velocity of 0.18261982 (mm/s).

### 3.2 Calculate the universal gravitation between the two shots

$$F=G\frac{M\cdot m}{R^2}=G\frac{100\times 0.5}{0.2^2}=8337.5\times 10^{-11} \text{ (N)}$$

How large is a force of  $8337.5\times 10^{-11}$ N? We can use an analogy.

Divide this force by  $9.8 \text{ m/s}^2$ , the Earth's gravitational acceleration, then we get  $8.5\times 10^{-9} \text{ Kg}$ .

This is to say, we can feel the gravitation between the two shots by holding an object of  $8.5\times 10^{-9} \text{ Kg}$  in hand. The weight we feel is just this

force.

We know a hair weighs about  $1 \times 10^{-6}$  Kg, so the gravitation between the two shots is far smaller than the force needed to hold a hair.

It's absolutely impossible for such a small force to draw a shot of 500 g and allow it to resolve around the large shot at a velocity of 0.18261982 (mm/s). Even in the universe where there is no air resistance or no influence from other gravitations, it's also absolutely impossible to realize traction and resolution.

#### **4 Conclusions**

From the above calculations we can see the conflicts among the gravitation calculated from Formula of Universal Gravitation, the mass of an object, and the revolutionary velocity calculated from Formula of Universal Gravitation.

So the following two aspects are proved:

(1) The core ideas of Newton's Formula of Universal Gravitation are wrong as Newton introduced mass into Kepler's Third Law, groundlessly replaced  $4\pi^2C$  by  $MG$ , and fabricated  $MG$  with a physical meaning.

Newton's Formula of Universal Gravitation will yield a very large mass for a celestial body, and a very large gravitation between two celestial bodies. The figures are so large that they exceed we humans' common knowledge, so we can be easily deceived by Newton's vague discussions.

We cannot decide whether the "mass of a celestial body" and the

"gravitation between celestial bodies" calculated from Formula of Universal Gravitation are right, unless we can find some references from real life.

(2) In Cavendish's torsion balance experiment, the force he measured by using two shots was not the universal gravitation fabricated by Newton, but another type of force. What was this force? I will discuss in another paper (refer to "Newton's Formula of Universal Gravitation is Just Kepler's Third Law"). But this force was theoretically proved to be one with a different nature from celestial gravitation. Cavendish mistakenly described the force measured from two shots as the same as celestial gravitation. He was even wrong to deduce the gravitational constant  $G$  by using this wrong "force".

## **5. Other important evidence**

Moreover, celestial gravitation is not simply the mutual attraction between two objects, but a complex situation where one celestial body revolves around the other and at the same time, both bodies are rotating. In the real world, we haven't found two objects whose mutual attraction (e.g. gravitation between two magnets) causes one object to revolve around the other. But this is the truest information the real world provides us. Universal gravitation can never explain why celestial bodies are in vortex motion. An additional "tangential force" is needed for a celestial body to circle around another celestial body. Where does this "tangential

force" come from? Newton also admitted he could explain it, so finally he delivered this puzzle to "God" by naming it the First Cause. "Tangential force" is very important. If Newton's gravitation theories couldn't explain, it proves they are wrong. So it is really careless for later generations to calculate the masses of celestial bodies by using Newton's gravitation theories, and to estimate the so-called constant G without knowing the real force measured from the torsion balance experiment. Such carelessness not only reveals that people ignore evidence, but also that back then, the voice of the scientific community was monopolized by the UK's politics and economy. The UK forcefully promoted a mistaken and even plagiarized theory to be the mainstream in the scientific community.