

Gravity -- Mystery or Contradiction

The internet contains content claiming some aspects of gravity science still remain a mystery. This also appears to be the general position of mainstream science and even Google AI. In particular, most uncertainty is directed toward what causes the force of gravity.

There is recent new discovery suggesting the mystery may be the result of a significant misunderstanding that arose at some point back in time due not to a lack of knowledge but instead to a fundamental contradiction in applying known scientific knowledge. That discovery is described in an internet article:

<https://www.ScienceAnew.com/GravityMystery.pdf>

It describes a proof showing the force of gravity on earth is an electromagnetic phenomenon caused by electric charge elements (protons and electrons) within the earth attracting electric charge elements within objects at and beyond the surface, and therefore gravity is not a unique fundamental force of its own.

Known scientific knowledge being highlighted is Newton's law of gravity and Newton's second law of motion. Both date from the 17th century and have proven to be unquestioned support for modern technological science. There is no issue taken with the validity of Newton's laws. There is concern however for the manner in which Newton's laws have been interpreted and whether a fundamental error has been made and a critical factor overlooked. This may be the basis why gravity continues to be looked upon as a mystery.

As explained, when Newton set forth his law of gravity describing the force between the earth and an object at the earth surface as being related to the earth's mass and the surface object's mass, he could not identify what caused the force. He did not claim that mass was the source of the force. It was sometime well into the future that science began to interpret mass in Newton's gravity law as the property that causes gravitational force and gravitational acceleration.

The above web article brings to our attention what appears to be a glaring contradiction overlooked in the present day interpretation of the force of gravity and Newton's laws. Newton's gravity law states the force of gravity on earth (F) is proportional to the product of the earth mass (m_e) and the mass of a surface object (m_s) divided by the square of their separation distance (R):

$$F = G \times m_e \times m_s / R^2$$

The acceleration (a) produced by the earth on the surface object is then:

$$a = F / m_s = G \times m_e / R^2$$

According to Newton's second law of motion ($F = m \times a$), the acceleration produced by some other force on the same object is:

$$a = F / m$$

In Newton's second law mass is defined as resistance to acceleration, i.e., the greater the mass the less the acceleration. This is accepted scientific knowledge.

However, in Newton's gravity law acceleration is shown as being enhanced by mass, i.e., the greater the earth mass the greater the acceleration. These are two very opposite representations of the mass property. This is a glaring misrepresentation, a contradiction! It is not characteristic of physical laws that properties act in multiple opposite manners. Therefore one of these representations is misleading and must be carefully interpreted.

Newton proved that using mass values in his gravity law gave absolute, valid results, and this conclusion has survived over history. There is no basis now to conclude Newton's laws are not valid. So what happened. The new discovery referenced herein proving gravity is an electromagnetic phenomenon concludes electric charge elements (protons and electrons) are responsible for the gravity force rather than mass. But since in general all protons have identical mass, all electrons have identical mass, and all neutrons have identical mass, there is a direct correspondence between total mass of the earth and total charge count for the earth. These are analogous quantities. Charge count would be an appropriate value to use in the gravity equation along with an adjustment to the proportionality constant. However, charge count for the earth is not a readily available piece of information whereas mass of the earth can be readily determined. The conclusion is that mass is used in Newton's gravity law as a proxy for charge count. Since Newton had no knowledge of protons and electrons, he did this inadvertently, but also correctly.

Gravity science has survived without error in spite of incorporating a built in contradiction. So is it likely that much of the mystery surrounding gravity is really due to the overlooked mass contradiction? Should gravity research, in its efforts to understand how gravity works, reconsider that mass does not cause force, mass does not cause acceleration, and mass does not cause attraction?

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