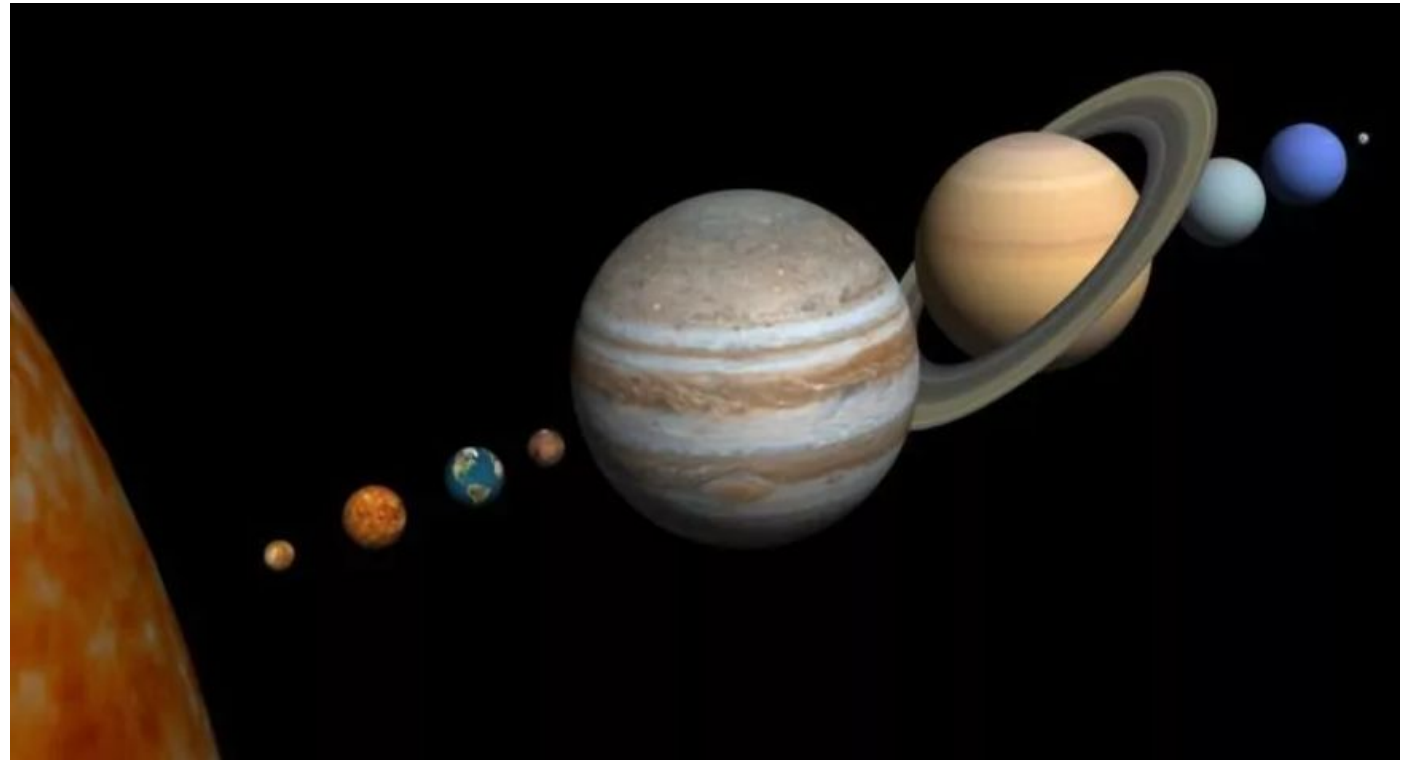


Merkushev Vladislav RTB - 211

# Gravity

Gravity is the force that attracts two bodies to each other. Everything that has matter, that is, everything that can be touched, has a gravitational attraction. This includes apples, people, Earth and etc.

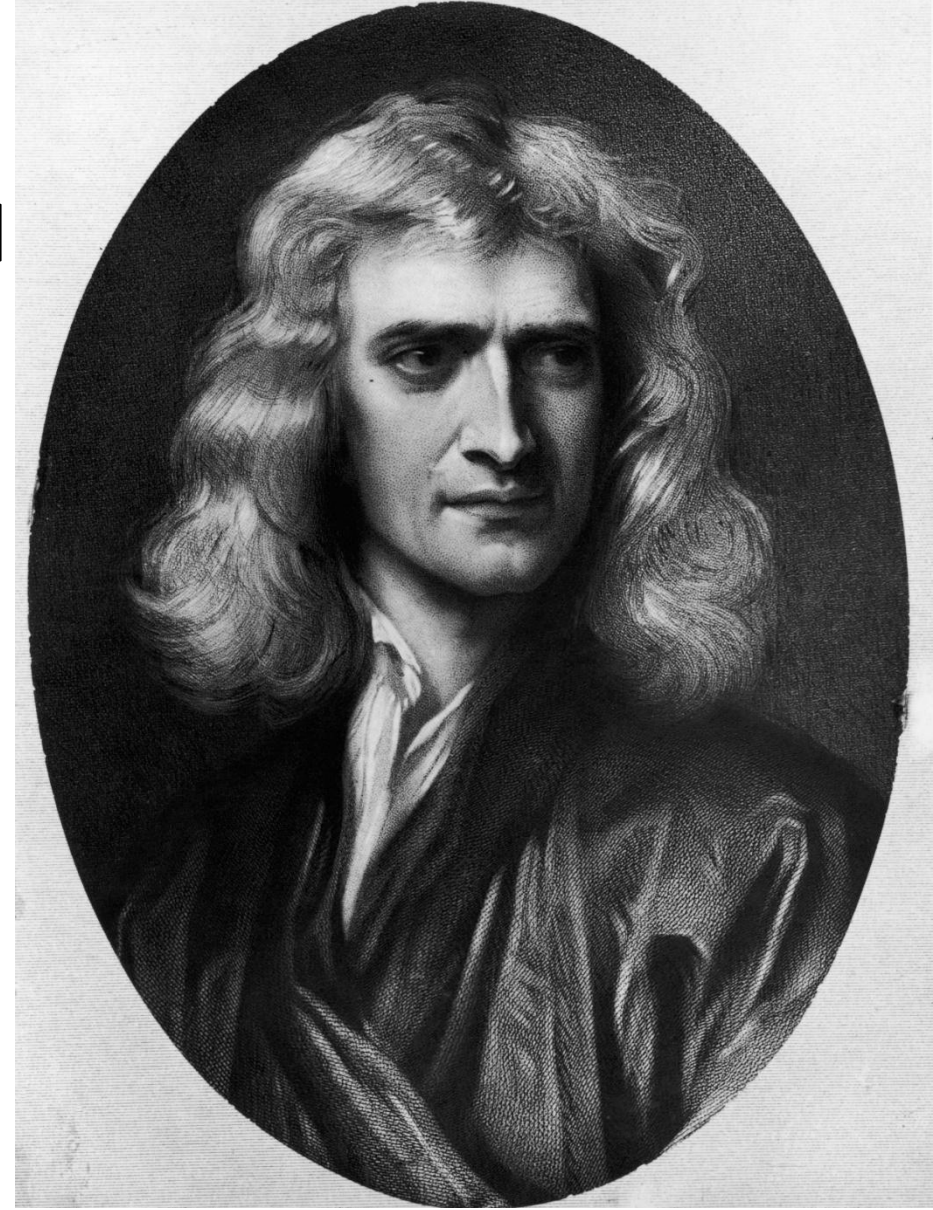
The degree of gravity of any object is proportional to the mass of the object. Objects with more mass have more gravity. Distance also affects gravity. If the object is far away, then the gravitational attraction is weaker. For example, there is a point in space where the attraction of Mars becomes stronger than the attraction of the Earth.



The English scientist Isaac Newton discovered the law of universal gravitation in 1667.

### **The law of universal gravitation**

Two bodies are attracted to each other with a force directly proportional to the product of the masses of these bodies and inversely proportional to the square of the distance between them.



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

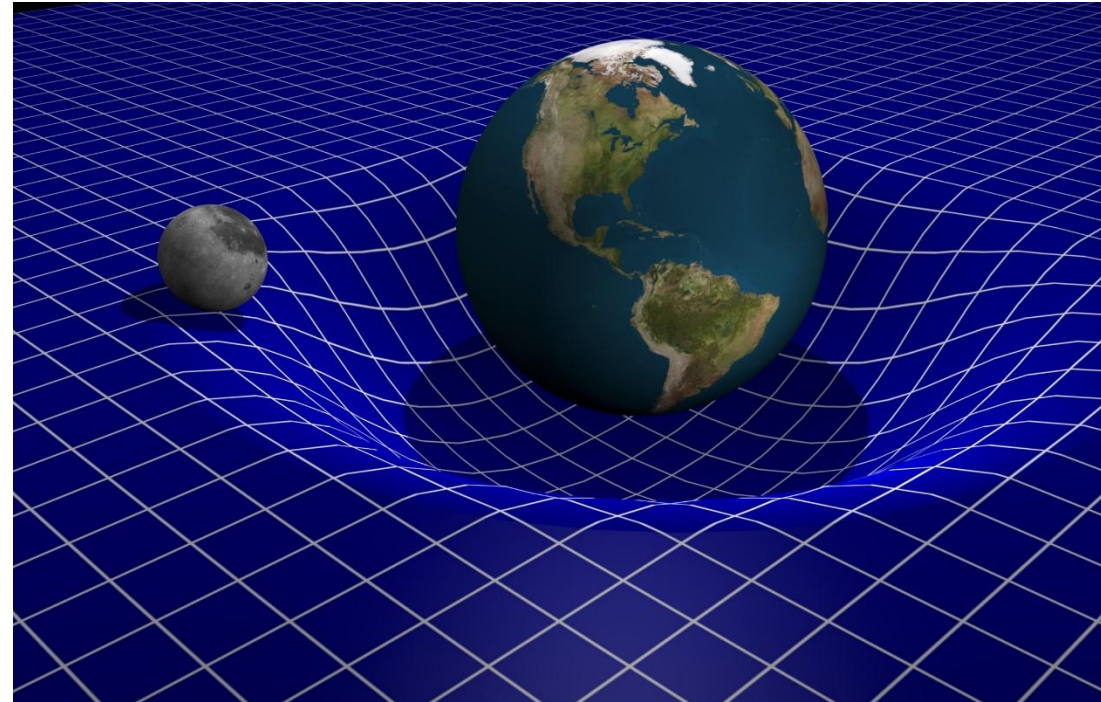
F — gravity, H

m — body weight, kg

G — acceleration of gravity, m/s<sup>2</sup>

R — square of the distance between the bodies

Gravity has several effects on the real world. Besides the fact that gravity not only holds objects on the ground, but also gives them weight. Objects weigh less on planets with less gravitational pull.



The moon's gravity is the force that creates ocean tides. Gravity also keeps the Earth at a comfortable distance from the Sun and keeps the atmosphere in place, giving all living beings air suitable for breathing and protecting them from solar radiation.

# Gravity and scientific research



Scientific research in the field of gravity will continue in the future.

Gravity does not fit into the theory of quantum fields, and scientists are still investigating how it connects with other fundamental forces. Gravity research also has more practical applications. NASA spacecraft track changes in the Earth's gravity, which helps scientists track changes in sea level and the Earth's crust.

To sum up, gravity is a phenomenon that exists in all corners of the universe. The world around us, familiar to us, and the forms of life on Earth and in space have formed and are manifested in accordance with the existing gravity. For everyone living on earth, the force of attraction of bodies to the Earth, i.e. gravity, is especially important.

Thanks for your attention !