Gravity Acceleration and Gravity Paradox HAN HANYONGQUAN, 15611860790, TANG YUTENG, 15810953809 — The magnitude of the gravitational acceleration of the earth is derived from low of universal gravitation. If the size and mass of the gravitational force are proportional to any situation, then the celestial surface gravity is greater than the celestial center near the gravity, and objective facts do not match. Specific derivation method, $F = \frac{GMm}{R^2} = mg$, $g = \frac{GM}{R^2}$. $G$ is the gravitational constant, $M$ is the mass of the earth, and finally the $g = 9.8 \text{ m} / \text{s}^2$ is obtained. We assume that the earth is a standard positive sphere, the earth’s volume $V = \frac{4}{3}\pi R^3$, assuming that the earth’s density is $\rho$, then $M = \rho \frac{4}{3}\pi R^3$, the into get: $g = G\rho \frac{4}{3}\pi R$. the density of the earth is constant. Careful analysis of the formula. The result of this calculation, we can reach conclusion the gravity acceleration $g$ and the radius of the earth is proportional. In addition to the radius of the Earth the right is constant, That is, the Earth’s Gravity acceleration of the outer layer of the earth is greater than the Earth’s Gravity acceleration of Inner layer. We are in High School, Huairou District, Beijing, China Author: hanyongquan tangyuteng TEL: 15611860790, 15810953809