Asteroid Redirect

Fran De Aquino
Professor Emeritus of Physics, Maranhao State University, UEMA.
Titular Researcher (R) of National Institute for Space Research, INPE

Asteroids are a great threat to mankind. Here we will show that it is possible to redirect them from their trajectories by means of a strong gravitational *repulsion*, produced by the gravitational interaction between the asteroid and a Gravitational Spacecraft positioned close to the asteroid.

Key words: Asteroid Redirect, Gravitational Spacecraft, Gravitational Mass, Gravity.

Previously, I have published a paper where it is shown a new type of quantum device for controlling gravity, called *Quantum Controller of Gravity* [1], which is basically a spherical capacitor connected to a specific voltage source. This device acts controlling at *subatomic level*, the *gravitational* mass of a thin spherical shell *at the outer plate* of the spherical capacitor. This thin shell works as a *Gravity Controller*, in such way that if the gravity acceleration at the inner border of the Gravity Controller is g (See Fig.1) then the gravity acceleration outside the Gravity Controller becomes $g' = \chi g$ (assuming that the Gravity Controller is sufficiently far from other bodies in such way that the intensity of their gravitational fields are negligible in the region); $\chi = m_g / m_{i0}$ [2] (m_{i0} and m_g are respectively, the inertial mass and the *gravitational mass* of the thin spherical shell (region of the Gravity Controller)); the value of m_g is controlled by means of the variation of the electric field in the mentioned region.

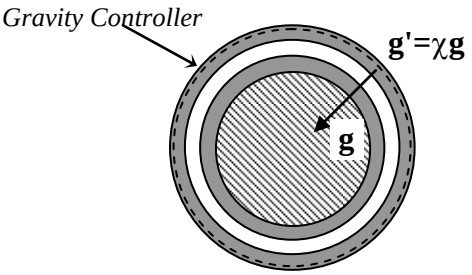

Fig.1 – Schematic diagram of a Gravity Controller

I have also shown that a Quantum Controller of Gravity can be transformed into a Gravitational Spacecraft [3]. In this way, we can imagine a spherical Gravitational Spacecraft with *several* (n) *concentric spherical capacitors* each one with a Gravity Controller, as shown in Fig.2. In this case, if all the *n* Gravity Controllers have *the same value* for χ, and the gravity acceleration at the inner border of the *first* Gravity Controller is $g = -Gm_{g(S)}/r^2$, where $m_{g(S)} \cong m_{i0(S)}$ ($m_{i0(S)}$ is the *inertial* mass of the gravitational spacecraft, correspondent to the region involved by the *first* Gravity Controller), then the gravity acceleration outside the *nth Gravity Controller* becomes $g' = \chi^n g$ *.

In addition, if $\chi < 0$ and n *is odd* then the expression above can be rewritten as follows

$$g' = \chi^n g = -\left|\chi^n\right|\left(-G\frac{m_{g(S)}}{r^2}\right) \cong +\left|\chi^n\right| G\frac{m_{i0(S)}}{r^2} \quad (1)$$

This means that if a Gravitational Spacecraft with n (odd) *Gravity Controllers* is positioned close to an asteroid, then the asteroid will be repelled from it with a gravity acceleration $g' \cong +\left|\chi^n\right| Gm_{i0}/r^2$. Therefore, if for example, $n = 29$, $\chi = -3$, $r = 10km$ and $m_{i0} = 15ton$, then the gravity acceleration, g', acting on the asteroid due to the Gravitational Spacecraft, will be $g' \cong +0.6m/s^2$ (*repulsive* in respect to the spacecraft).

The idea of generation of a *repulsive* gravitational force field using *Gravity Controllers* is not new. In a previous paper we have showed a similar method [4].

* In this case, there is also a contribution due to the spherical capacitors, but it can be inconsiderate if the capacitors are very thin (thick << 1*mm*); *n* << 100; $|\chi| < 10$ and $m_{i0(S)} > 10ton$.

Gravitational Spacecraft

(with n concentric spherical capacitors, each one with *one* Gravity Controller)

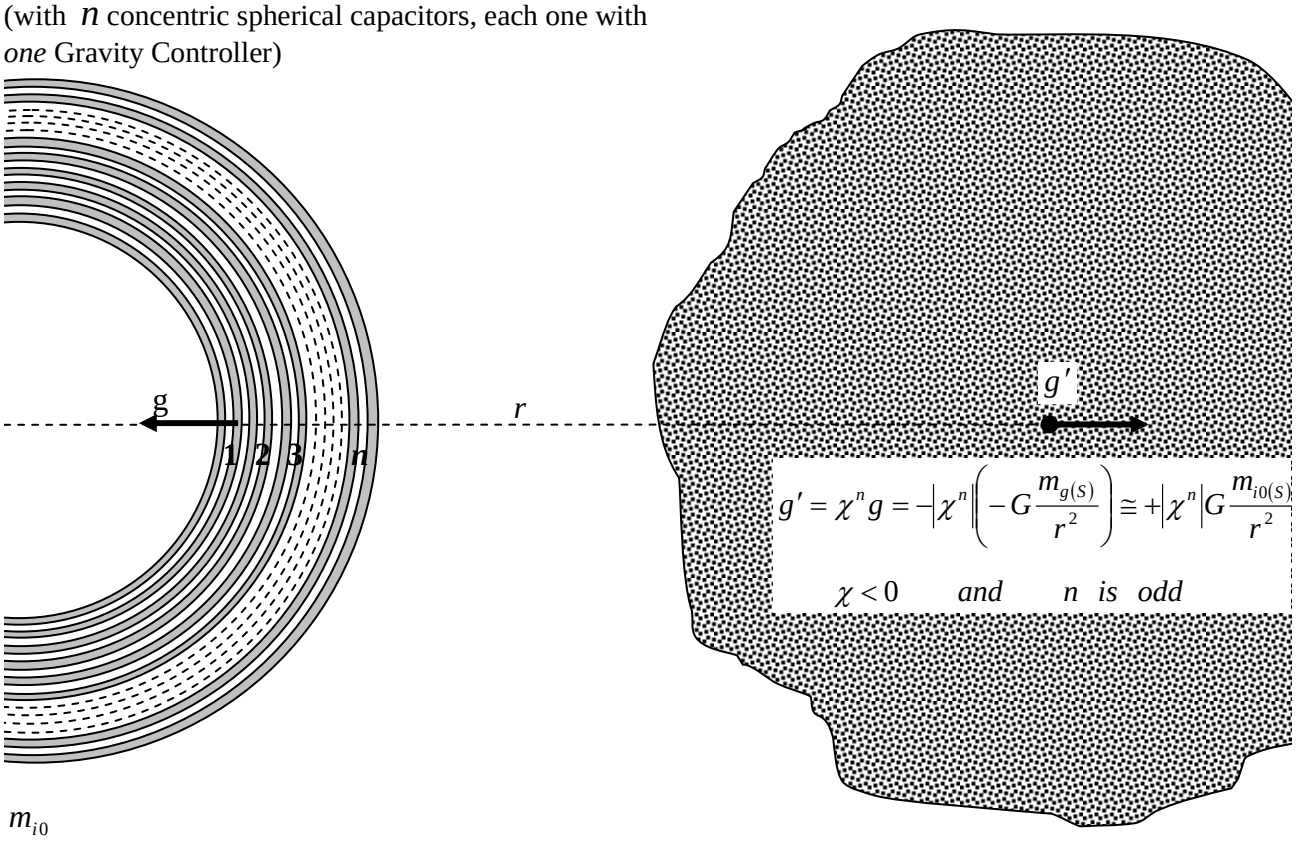

Fig.2- *Asteroid Redirect.* For example, if $n = 29$, $\chi = -3$, $r = 10km$ and $m_{i0(S)} = 15ton$, then the gravity acceleration, g', acting on the asteroid due to the Gravitational Spacecraft, will be $g' \cong +0.6m/s^2$ (*repulsive* in respect to the spacecraft).

References

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