

Space Aliens and Gravity

By James Carter

To fully understand the principle of the gravitational expansion of mass, space, and time, it is necessary to first present a little science fiction tale. This is a story about the initial discovery of gravitational motion and force by a group of scientists far more advanced than beginning theoretical physicists like Galileo, Newton and Einstein.

As our story begins, a group of people are traveling through the deep space between the stars in the Starship Titanic. They have been on this journey for many generations and for one reason or another have lost all knowledge from their former civilization. They are technically advanced and have a wide array of observing and measuring devices. Being far removed from any large bodies of matter for thousands of years, there is no possible reason for any of them to consider the unmeasured phenomenon of gravity. The area of the starship containing their living quarters is a large rotating circular structure that provides an inward centripetal acceleration of 10 m/s^2 at its outer circular floor. This artificial gravity saves their bodies from the damaging effects of being weightless for long periods of time. These space travelers understand this constant centripetal acceleration very well and are able to increase or decrease it by changing the rate of rotation or moving up or down within the capsule. They are also familiar with the momentary linear acceleration produced by the starship's engines. It is just that they do not associate these accelerations with gravity because they have neither heard of nor experienced the phenomenon of gravity.

At long last, the Titanic approaches a star surrounded by a group of planets similar to our own solar system. After decelerating their spacecraft to the inertial frame of the star, the space aliens decide to stop and explore one of the inner planets that has oceans and continents. They were looking for a new planet to call home and this looked like a likely candidate.

As they maneuvered their spaceship around the planet, they unexpectedly noticed that its surface seemed to rush towards them when they were not measuring any acceleration toward it. After a number of speed adjustments and calculations they determined that they could set their ship at a velocity vector that was both away from the planet and at right angles to it and that exactly balanced the motion of the planet's surface toward them. These maneuvers put them in a circular orbit around the planet. Eventually, they guided the ship to a stationary point above the rotating planet's equator (geosynchronous orbit).

They didn't quite understand the actual dynamics of this orbit, but since the Titanic seemed to be secure as it revolved with the planet, they decided to send a smaller exploratory craft down to the planet's surface where they could observe this strange new phenomenon from close up.

As they moved down toward the planet's surface, they had to keep accelerating the craft upward in order to eventually make a soft landing. Once they arrived on the surface, they were able to measure that it was accelerating upward at 10 m/s^2 just like it had been appearing to do from orbit. Once the explorers got out of the craft and started walking around, they quickly noticed that the upward acceleration of the ground felt exactly like the inward centripetal force of their

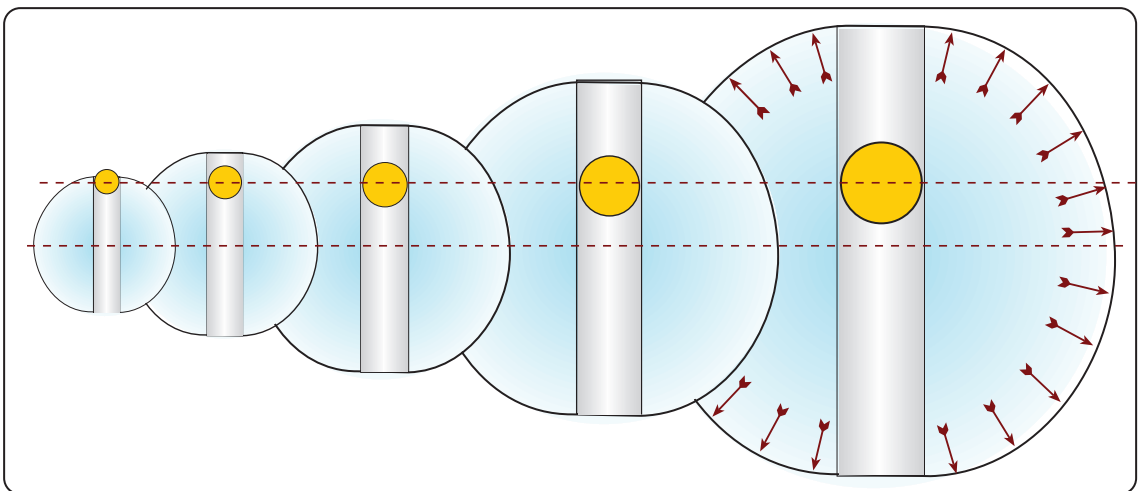
rotating circular living quarters back on the Titanic.

After thinking about this strange phenomenon for some time, they concluded that the matter within the planet must be slowly expanding. This idea would also explain how the Titanic was able to maintain its orbit around the planet. It was simply moving away from the planet at the same speed that the planet's surface was moving toward it. While the idea of an expanding planet seemed rather strange and unexpected, that was certainly what they had measured with their accelerometers and almost no one was able to come up with an alternative explanation. One old man with fuzzy white hair suggested the somewhat incomprehensible theory that there was some kind of a virtual attraction between the people and the planet that constantly pulled them together. This idea seemed completely out of the question to the majority of the observers because such an unmeasured effect would be completely unlike the effects of magnetic and electrical attractions that they were all used to calculating and measuring. The concept of an infinite reaching gravitational attraction between individual atoms also seemed to be completely unreasonable because the simpler and more intuitive local measurement of gravitational expansion was so readily at hand.

These were practical people who were used to the everyday measuring of force and acceleration in a straightforward way. The idea of an infinite and inalterable attraction between all bodies of matter and photons was so preposterous that such an unlikely and counter-intuitive concept could simply not be accepted by any of them.

They concluded that if the matter within planet was slowly expanding, then the matter contained within the Titanic and even their physical bodies were at an, until now, imperceptible rate. To test their principle of the gravitational expansion they placed sensitive accelerometers at both the Titanic's bow and stern. They discovered that the two ends of the Titanic were accelerating and moving away from each other at a small but measurable velocity. The old man with the white hair claimed their experiment proved nothing since his mass attraction theory would produce the

True Gravitational Motion



same results.

The technicians got together and designed an experiment in which gravitational expansion and gravitational attraction would yield different results. They fashioned a large glass sphere with a hollow shaft through its center. They then machined a solid Gold ball that would loosely fit within the shaft. They attached a number of accelerometers to the sphere's surface and put another one at the Gold ball's center. They then placed the ball in the hole at the outer surface of the sphere. They then recorded video of the apparatus as the ball began to move down the shaft towards the center of the glass sphere.

The old man predicted the ball would be attracted toward the center of mass and accelerate to a maximum velocity at the center and then decelerate to a stop at the opposite end of the hole. He claimed this back and forth motion would repeat endlessly barring any friction between the ball and the sphere. The rest of the group predicted that gravitational expansion would leave the ball motionless while the surface of the sphere moved away from it in all directions.

As they watched, the ball appeared to decelerate to stop at the center. When they checked the accelerometers they found that all points on the sphere's surface continued to accelerate away from its center while the ball registered no acceleration at all. They concluded that gravitation attraction could exist because they were unable to devise any experiment that could detect it.

In conclusion, no rational space alien who carefully measured gravity would ever conclude that it is some kind of occult and non-local attraction between atoms when it can be easily measured that the mass, space, and time of all atoms are slowing expanding at a constant and synchronous rate throughout the Living Universe.