

# Inflationary Effects on the Formation of Galaxies

Mitch Emery  
416 W. John Street, Maumee, OH 43537  
e-mail emery\_mitch@yahoo.com

This note is based on ideas from a previous study [1] about force-free circular motion. Its purpose is to elaborate on the formation of galaxies, and to make clear why the bars of a spiral galaxy exist.

## Introduction

A means by which circular motion is natural and force-free was introduced in my original paper titled, *New Physics Based on Force-Free Circular Motion* [1]. Such motion is defined as the inertial effect of two separate motions, but where one motion carries the other. A body moves in a straight line, but its linear momentum is carried and turned effortlessly by a spin from the body itself. Hence, the body moves about a full circle with each of its own 360° rotations. The roundabout motion is somewhat like that of the Moon's orbit.

The spin involved with force-free circular motion is no ordinary spin—it is strictly an inertial effect. In other words, the spin is a rotating inertial frame of reference. Thus, a body's straight-line motion is sustained but not always seen. It can only be seen if viewed from a frame of reference that turns with the body's spin. But from a fixed point of view, the two motions appear as circular motion. Inertial effects of this sort potentially exist with all circular motion, but in the presence of force the effect is not realized because force prevents it from happening.

Force-free circular motion may truly exist, but still Newton's First Law comes into play. For example, consider a ball twirling from a string. Various things happen, but some are caused by inertia while others are caused by force. The string is pulled taut by straight-line motion from the ball. The pulling effect is a fictitious force caused by inertia, while the string pulls back with a true force. The ball then pulls at a right angle to the force of the string. Conceivably, the ball tries to twist about its connection to the string because the pulling effects are unbalanced. And if a twist actually occurred, it would carry and turn the ball's linear momentum. However, tension throughout the ball and string prevents the twist from happening. The force of the string is like a stiff rod, and so the ball's linear momentum is held at a right angle to the force, by the force, and dragged about a circular path by the same. Indeed, the ball tries to move in a straight line, but the effect is not just an act of Nature. It is caused by force.

At any rate, a ball that actually twists or turns will have the same kind of pulling actions within the ball itself. A ball is bound together by force, and so its linear momentum has an unbalanced pull with the force of the ball. Thus, the ball's linear momentum tries to twist itself at each and every point along the radius of its turn, but is held at a right angle to the force, *by the force*, and dragged about a circular path. The pulling actions from within a ball are no different from those of a ball's twist at the end of a tether. The same force that pulls on the ball tends to keep the ball in a straight line of travel. The same thing happens to anything turned by force. Newton's First Law is technically

wrong. A body acted upon by force is caused by force to work at maintaining a straight line of travel. Ironically, it is only force that upholds Newton's First Law of Motion.

This idea of force-free circular motion leads to a radical change in physics. According to my full report [1], the effects of gravity are produced by force-free circular motion. A body with such motion has an imbalance of momentum, and therefore a twisting effect is produced by the body itself. A strong twist will carry and shift the body's orbit so as to produce the effects of gravity. For instance, gravitational effects are produced by the Earth's rotation because the spin is force-free. Each and every particle of the Earth moves about with force-free circular motion. There really is no attraction between a stone and the Earth. The stone is carried about with the Earth's rotation by force-free circular motion. An imbalance of momentum creates a twist from the stone itself, and so its frame of reference tends to shift and become eccentric to the Earth. Quite simply, the circular path of a stone is shifted and directed toward the Earth. The Coriolis force also plays a role in the effect, but the overall perception is that of gravity. The strength of gravity is determined by the speed of the Earth's rotation, while gravitational effects are also produced by the Earth's orbit around the Sun. Yet, the Earth's orbit really has no influence from the Sun itself. This idea of gravity applies to all celestial bodies; including the stars of a galaxy. For this reason, there is no need for dark matter to exist. In order to elaborate on the formation of galaxies, the following section is from the original study [1].

## Creation

Suppose at some point in time there was only but one mass, for it contained all the matter in the Universe. As a reference term, this body is called the *Big Mass*. The Big Mass had two force-free rotating motions that were each perpendicular to the other. Yet, one spin was faster than the other, as with a 2:1 ratio. The effects of gravity squeezed the mass very tightly while the tighter it got the faster it rotated. The increase in speed was caused by the conservation of angular momentum. This ever increasing and dual spinning motion is called the *Big Spin*. The primary spin, which was the faster of the two, can be described as an east to west rotation, or a horizontal spin. Its direction was like that of our galaxy while the Earth spins and revolves in the opposite direction. A second and slower spin then turned the first spin top over bottom as with a flipping motion. It can be described as a north and south rotation, or a vertical spin. The escalating effects of gravity produced a *Big Force* similar to that of a tight squeeze on a rubber ball. However, gyroscopic effects from the dual spin eventually put a drag upon the spin itself.

Gravity then lost its grip while everything got a big push from decompression. The Big Mass quickly inflated and exploded into pre-existing space. The big push was incredibly fast, but the Big Spin continued throughout creation.

Big chunks of matter moved outward as they turned and followed the dual spinning motion. Furthermore, inflation caused the outer mass to move away from the center at a faster rate than those areas closer to the center. Hence, everything now moves apart and away from each other in all directions. But since the horizontal spin was faster than the vertical spin, the two squeezing effects were not the same. Thus, inflation was not balanced, nor did the Universe expand into a perfectly shaped sphere. Instead, it is somewhat flattened by its slower north and south vertical spin. The rate of expansion will gradually slow down and stop someday as all things circle back toward the center of mass. The contraction rate will continuously increase and create what can be called the *Big Squeeze*. During the *Big Squeeze*, everything will compress very tightly into a singular rotating mass. The whole event will then start over with a *Big Bounce* as the mass explodes into a brand new world.

In reality, the Big Bounce caused a series of explosions in very rapid succession. The first and second stages (and possibly more) were caused by decompression. The Big Mass quickly inflated and blew itself into big chunks. Still, the chunks followed the Big Spin while massive heat from radiation was released from them. Radiation was emitted in a straight line by force, but each body moved in a curved path caused by inertia. Wherefore, the big chunks were spun by the push of their emissions. The chunks would each become a group of galaxies for their inflation went on to blow themselves into smaller chunks. The smaller chunks also released radiation that made them spin.

Spinning chunks of matter were now scattered throughout space while curving in two different directions. The dual spin caused everything to be tipped and turned in all different directions, just as galaxies are today. The independent spin of each body somewhat agreed with the much faster horizontal spin of the Universe, while the slower north and south vertical spin made them wobble. The wobble was caused by an imbalance of momentum. The Big Bounce and its push were nearly done when the internal pressure of heat blew the smaller chunks completely apart. This type of thermal explosion was much weaker or less intense than those caused by inflation. It simply pushed all the particles of a spinning mass into various orbits around a common center of rotation. Therefore, the smaller chunks of matter were blown into rotating clouds of dust and gas. Particles from within the clouds would eventually cluster together as to form the stars of a galaxy.

A thermal explosion will push the inner most parts of a rotating mass to the outer most parameters of a newly formed cloud of dust and gas. In other words, a body will turn itself inside out as it explodes into a much larger, but more dispersed cloud of particles. Yet, gravitational effects from the cloud's rotation will draw everything back toward the center of rotation. A cloud as such becomes very dense, so its particles begin to clash with one another. And since the cloud originates from a body that turns itself inside out, its outer circumference moves more slowly than its center. The difference in their angular speeds will cause the

collision of particles to whirl about in the opposite direction of the cloud's rotation. Subsequently, huge balls of dust and gas are created with a spin *opposite* to that of a galaxy. The rotating spheres are then spun more tightly by the effects of gravity, and ignited by rising temperatures from within. Stars are born, and our Sun is one of them.

The explosion of a spinning mass often creates a spiral pattern as particles move out and away from the center of rotation. The linear speed of rotation does not change as the particles are pushed into larger orbits. It just takes longer to complete a full circle of travel. Accordingly, everything trails behind the center of rotation. This will cause the veins of a galaxy to point away from the direction of its spin. But why do the veins of a galaxy exist at all? In order to see the cause, we must go back to the beginning of creation.

## Remnants of Inflation

Prior to a huge explosion, the original Big Mass of creation was in the process of inflation. During inflation, the Big Mass expanded outward from its center in all directions. Yet if looking at just a small piece of the whole (other than its center), expansion was predominately in just one direction. So when the Big Mass exploded, each smaller piece of the whole went on to expand just as it was. Thus, a small piece of the whole did not expand equally in all directions. Primary, each piece expanded laterally, or lengthwise, so as to elongate itself. So when the internal pressure of heat blew the fragments apart, the strength of impact was affected by its direction. Along the main course of inflation, the effects were diminished to some degree. Inflation caused a body to expand lengthwise, and so the force of a thermal explosion had less impact in that direction. Hence, particles of dust and gas were propelled most abundantly in directions perpendicular to that of inflation. Accordingly, the number of stars along the line of inflation is few and far between, and the bars of a spiral galaxy coincide with a direction perpendicular to inflation.

Indeed, a thermal explosion may turn a body inside out, but the effects depend on the speed of a body's inflation. However, the rate at which a body inflates depends on the force of its compression. And the degree of its compression depends on where a body originates from within the Big Mass as a whole. A body might be from deep within the Big Mass, or it may come from its outermost parameters. As a result, different shapes of galaxies are produced according to their inflation rates.

## Conclusion

The principles of force-free circular motion explain the formation of galaxies, and makes clear why the bars of a spiral galaxy exist. It is only one of many phenomena explained by this new idea. So most importantly, the consistency by which it explains the Universe becomes stronger.

## References

- [1] Mitch Emery, "New Physics Based on Force-Free Circular Motion", Proceedings of the Natural Philosophy Alliance Vol. 3, No. 1: 24-36.