

## Gravity from the Ground Up

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The intention of this document is to follow the history of gravity toward a new perspective. From this new view we arrive at many revelations, including answers to some spacecraft anomalies where current theory doesn't properly explain certain of their motions.

### Chap. 1 From down to gravity

Let me introduce you to the concept of 'down'. 'Down' is a big part of the history of our knowledge. At first thought, the direction of down is natural. Everything on earth seems to follow its rules. What really bothered thinkers was why the sun, moon, and stars disobeyed the rules of 'down'. They stay up all the time. It became the definition of the world that the earth is down and the heavens are up. Now down has this property that it attracts and keeps its adherents.

Clearly we all know what down is, and soon mankind needed measures of it. The key concept became weight. Weight is how intensely we go or stay down. It has some approximate connections to size. Experiments revealed that the intensity of downward action had some connection with initial height before items head down.

Soon mankind was surveying the earth's surface to which down related. We are led to believe that the surface, which endowed the concept of down, was like a flat board. Further analysis showed very long range curvature and soon more things were figured out about this surface. It took most of the history of man to realize that the earth is a sphere.

So now down is a problem. The direction of down varies depending on your position and perspective. People on the opposite side of earth, who are upside down to you, recognize down locally toward the surface even though their down is up toward us. Beyond that is the fact that the sun, moon, and stars are sometimes down and sometimes up. Mankind needed gods to maneuver around this complication. And now, in the heavens, the down and up being spherical concepts need to be drawn as rings and separated somehow. Even worse now is deciding what is up and what is down overall, for relating how the earthly sphere we live on relates to the space around us and to other heavenly contents.. What keeps the earth up, ie. from falling to somewhere? I think Atlas used to handle this job.

As long as earth's surface identified down, there remained a safe haven for logic. Even when the earth was found spherical, all was well as earth was the center of the universe, and naturally all relative motions would center upon her. The sun, and moon, stars, and the now understood planets would center upon earth or circle around her. The appcart

collapsed with the revelation by Copernicus that the earth moved around the sun. Up and down went down. Things got so bad that believer Galileo ended up in jail.

In this more complex universal situation, 'down' needed more definition and more detailed attributes. Along came gravity to carry the fight forward. Something kept us and our things fixed to the surface, and its vicinity. We always want to measure motions and velocities. Their behavior serves as our knowledge base. Inspection showed that closeness to the surface played a part in velocity downward, while Galileo soon showed that size didn't matter for velocity even though it greatly affected the push called weight. Also, without a flat surface for boats and things to fall off from, it's no longer clear why 'down' works. Why does 'down' seem the same to everyone on the sphere?

So the 'down' mechanism became gravity. Conveniently definitions for gravity include determining a measure of its effect on velocity and it's direction, which is toward the center of earth. Gravity pulls things down and can make apples fall on the head of people like Newton. Since gravity pulls things down it can be called an attraction and attract things at various distances. We now call it a force. Having found it aiming at the center of earth we call its actions as centripetal force. So all those things that are up actually obey the rules of 'down'. But they don't come down. In order to insure this distance retention and to retain it, seemingly forever, the things that are up, and stay up, are able to offset the pull of gravity by moving away or to the side. In fact, those motions have to be how the universe can continue to exist. We know that in the solar system the motions vary appropriately and follow a pattern discovered by Kepler. Imagine all the things that are up, all of them moving at different rates relative to the central source. Of course gravity varies by distance so some motions could have the same speed while at different distances or in different directions. These motion velocities were collected by Tycho Brahe and analyzed by Kepler. They were ultimately connected to gravity distances by Newton. Considering all the items in space there must be nearly an infinite number of velocities. Plus, each body is a center to each other body which squares the number of relative motions needed.

Gravity has become our base concept and has a fixed measure. That fixed quality is expected since all points on the surface of earth experience similar gravity force. But now that gravity acts throughout space and not just on earth, it is misunderstood. Born from 'down', it seems to be an attraction, but when related to space it is a push downward toward all mass centers throughout space. It is long past time that we understood gravity this way. You see, what has happened, as Newton focused gravity in space he lost any mechanism by which it could attract. Soon the force of gravity became recognized as 'action at a distance' lost any physical attribute. Physics studies interactions and they require contact or they are metaphysical.

Although not a point of focus, relativity would not have taken hold without being the first to attempt to provide a physical nature to gravity. The first step was the elimination of any physical form to space and its replacement with curvature. Gravity then became known as curvature of space near mass even though space is a concept describing the 3 dimensional relationships between physical things. Subsequently too much of curvature

and multi-dimensions became assigned to space rather than relating curvature to the measures of what happens within. Curvature of relationships is the underlying nature of actions within space and must be accounted for. Assigning the curvature to space itself has created a lot of strange concepts and bogged down physical understanding.

The science community seems to hate the fact that Gravity needs revamping and that relativity theory is being challenged. For example, pushing gravity theories are automatically rejected. Admittedly they need some clarification and corrections that are now available via 'The Universe Is Otherwise' and via my more recent papers.

## Chap 2. Pushing paeps and 'net' pressure

So what is this new gravity model? Imagine gravity as beams of force moving in all directions at velocity  $C$  in open space. The beams interact with and push upon masses they encounter. Gravity is a pushing pressure of long wave radiation beams moving in all directions creating the structure of space. It pushes upon matter while its pressure is modified by masses. The net pressure produces 'attraction gravity'. In addition, orbital motions (inertia), magnetism, the nuclear force, etc. are results of 'net' unbalanced gravity.

Paeps, my name for gravity particles, exist as one wave of a radiation beam. Paep beams penetrate and are diminished/converted by masses. Attraction gravity is the 'net' imbalance of undiminished downward paep streams encountering diminished upward pushing beams which exited from the mass. The full focused force of all direction gravity is the nuclear force. Deflected paeps create magnetism. Rotating mass bends exiting paep streams creating unbalanced/directional whirling and thus orbiting.

Analyzing the sun serves as one key to how gravity works. The sun gives out or radiates heat and light. These properties have physical existence. Somehow they are created and move out. Early on these properties were assumed to be chemical reaction output. But nothing seems used up and the sun doesn't get smaller. Then the radiation source became nuclear reactions. But these need instigators. So the answer is that radiation comes out from the sun in response to gravity coming in. Then if gravity comes in as radiation, there is an equilibrium type of balance. Another clue that the pushing component of gravity can't be particles since it has to be modified, and its push diminished within masses. So it is radiation. Another advantage of radiation over particles is that particle interaction would tend to be elastic and nothing would be netted out. Elastic means that interactions couldn't change the velocity or push of gravity while they were changing its direction. Penetration of matter works best the more linear it is. Long waves penetrate better than short waves which 'splash' down.

Since we rely on penetration of mass affecting gravity, we need to specify what mass is. Mass is the existence or spin relative to a local equilibrium of space. The spins of internal components of a body, along with the spin of the body as a whole, taken together, define the density of mass and ultimately the existence of mass. Mass is created by unbalanced intersections of paep waves via the equation  $M=E/C^2$ . As energy can be released nearly instantaneously from mass, mass is created extremely by the energy accumulation in the

reverse of the equation. Then Energy is generally a local activity, and the essence of a local activity is motion. In order to remain local, that motion must be rotation or spin. The non-local subset is long range 'energetic' transmissions that contain and carry the local activity internally, usually as potential energy.

The functional revelation of this model is that masses affect gravity to the extent that gravity exiting a rotating mass acquires some of its rotation as it is effectively launched into space. That creates an imbalance in space from which other net gravity differences occur. For example, since the sun rotates counterclockwise, the exiting gravity beams bend to the left and impart an imbalance to orbitals, such as planets, and cause them to revolve around the central body sun. Additionally the bent gravity initiates a rotation within the planets depending on how far from center the bent beams are focused.

Rather than being Newton's 'resistance to a change in motion', inertia is accommodation of the local net flow of gravity.

To justify bending, launched gravity beams bend, in part because there is no 'straight up'. Imagine launching something with moderate speed which continues upward. Does it stay straight up from you? If so it must revolve with earth and bend relative to fixed space and outside observers. Or does it continue straight up from where you were originally? If so, it bends relative to you and all earthly observers.

### Chap 3. Curvature/bending

Besides addressing curvature within our universe, this model exposes much more when you consider the concept of gravity coming from and pushing from all directions. That means that we on earth incur pressure, not only downward but also from all directions. The net of all downward pushes including those angling downward net against all upward pressures including those angling upward. It is the net of all pushes that gives the gravity constant. Recognize also that we incur sideways pressure upon ourselves. It just happens that those pressures net to zero since there is no sideways diminishing component. The sum of these pressures upon matter is what keeps it together and is called the nuclear force. It is the force of gravity expanded from linear to three dimensional. We will address the other forces in the micro world gravity section.

One other concept we need going forward is that sufficiently bent gravity beams can create mass. The micro concepts are addressed later. But scientific attention to gravity is spatial so we focus there now.

## Chap 4. The Pioneer anomaly

- A. Kepler determined that planets travel slower the further they are from the central sun. They obey a formula  $kT^2=R^3$ . This formula can be sq rooted  
To say  $k^{1/2}T=R^{3/2}$ . The orbital's revolution rate is a factor of distance to the center, and so the center (sun) controls orbital revolutions. It does so by its own revolution. The horizontal contribution by the sun's surface rotation motion is diminished as part of the whole effect as more non-solar effected beams affect the orbital as distance increases. The equatorial spin of the sun's equator diminishes by

distance  $R$  and the contribution by solar beams angling in from greater latitudes diminishes by  $R^{1/2}$ .

- B. Attraction gravity is the net of undiminished downward pushing gravity beams and oppositely directed diminished beams exiting the mass, moving from the ground up. As long as these motions are linear and 180 degrees opposite, the measure of their effect follows the  $1/R^2$  law. One can understand this by imagining the same total 3 dimensional effect spread over 2 circles of different radius, one within the other. One over  $R$  squared is a factor in any current gravity calculations. However, for paep gravity there is a slight deviation caused by the sideways motion delivered to beams exiting rotating masses. The factor is  $2/C$ , the sideways velocity of the sun over the speed of gravity. This factor increases the net downward push by diminishing the upward push. Also, this factor is cumulative. The farther from the sun, the more the  $2/g$  factor has shifted the overall beam to the left. A proper formula here will explain the pioneer anomaly where the spacecraft slow unexpectedly as they exit the solar system beyond Saturn.

## Chap 5. Solar system shared gravity

- C. If a stationary ball is impacted and penetrated by beams in all directions it looks like a pincushion. Given our suggested penetration, the output beams will also fill space in all directions while departing linearly. However, if the ball is rotating, the rotation will cause the exiting beams to be bent. The faster the rotation, the greater the bending is overall. The linear velocity of the rotation is greatest at the equator and thus beams exiting there will bend the most. Beams penetrating one pole and exiting the other will not be bent at all and those in between will have bending which increases as the exit latitude decreases. Since the bent beams influence orbitals, the maximum influence is along the equatorial plane and lessens as the latitude increases. Thus orbitals must exist along the equatorial plane and cannot achieve revolution nor be retained at significant latitudes. Our solar system is therefore nearly a plane.
- D. Jet streams and flyby anomaly  
As bent beams arrive at a planet, they cause rotation of the planet by pushing the surface and innards especially on the right side. The push velocity is greatest at the surface and less below. Above the surface these originating beams also aid the rotation of the atmosphere. There is a second source there as the planet rotation causes penetrating beams also to bend. This combination causes winds and the jet stream to move generally from west to east. We have seen from Keplers 3<sup>rd</sup> law that the rotation velocity contribution from beams exiting from the surface diminish with radial distance.  $kT=R^3/2$  .Likewise, the added bending from the sun supplied beams diminishes as they depart the planet perpendicularly and no longer apply pressure parallel to the surface. Adding up the two effects means the atmosphere will rotate faster that the surface up to some altitude and slow to and beyond the geosynchronous velocity as the effect of each factor diminishes with altitude.

In addition to ‘space’ rotating faster than the orbital body in its atmosphere, there is a varying relationship between surface and space rotation as latitude increases, ie as one approaches the poles. The incoming bent gravity beams have the same velocity

there as at the equator, but the surface moves slower. That shows in winds that are greater near the poles and flow towards the equator.

This discussion reveals the factors that cause an anomaly in estimating the time/velocity of fly by space craft. Logical thought must assume that the downward attraction of earth affects the flyby and that the inertia (bent gravity also affects it. But here we see that there is a wave in the linear' gravity inertia that increases the velocity in the direction of earth's rotation below the geosynchronous region, and another wave that increases the flow away from the equator.

#### E. Planets rotate the sun

Planets rotate as does the sun. Therefore, they send out bent streams of gravity. Some of those beams are aimed at and impact the sun. The result is misunderstood because the properties are reversed. The weak bent beam from a planet can just barely push the sun. I guess if the planet were considered the unmoving center of the universe, the sun might revolve around it in billions of years. However, the planet is moving in orbit so the beams affecting the sun keep coming from different directions. The bottom line result is that the planet causes the sun to rotate a bit. Since all planets cause the sun to rotate, the sum of the causes can somehow be totaled up to explain the actual rotation rate of the sun.

#### F. The Magnetosphere

.Paep beams exiting the sun bend left due to its rotation and ultimately the portion arriving at an orbit will push an orbital in orbit. Those beams moving across the face of the earth rather than straight down are seen from the back by earthlings and are misleadingly labeled as solar wind. The earth also bends paep beams to its left. Picture a region between the sun and earth where the beams from the sun and earth interact, each bent counterclockwise relative to their origin body. There will be turbulence surrounding a small region of equilibrium which is the focus of the magnetosphere.

3 body issues and Math issues

## Chap 6. Micro world gravity

#### G. Magnetism

To understand magnetism, picture paep gravity beams being deflected perpendicularly by a series of common spinning electrons. The result is increased gravity push in one direction (repulsion) and decreased push in another direction (attraction). A series of electronically stimulated wires wrapped to enclose a region redirects paeps in one direction around a circle of the wire via the right hand rule. This gravity region is a field as it is more redirected near the wire than it is at greater distance. On the inner side of the wire circle the paeps are redirected in the opposite direction producing a beam since the area is enclosed.

#### H. Nuclear forces

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Under construction --- see 'The Universe is Otherwise #2' – The Spectrum of Existence