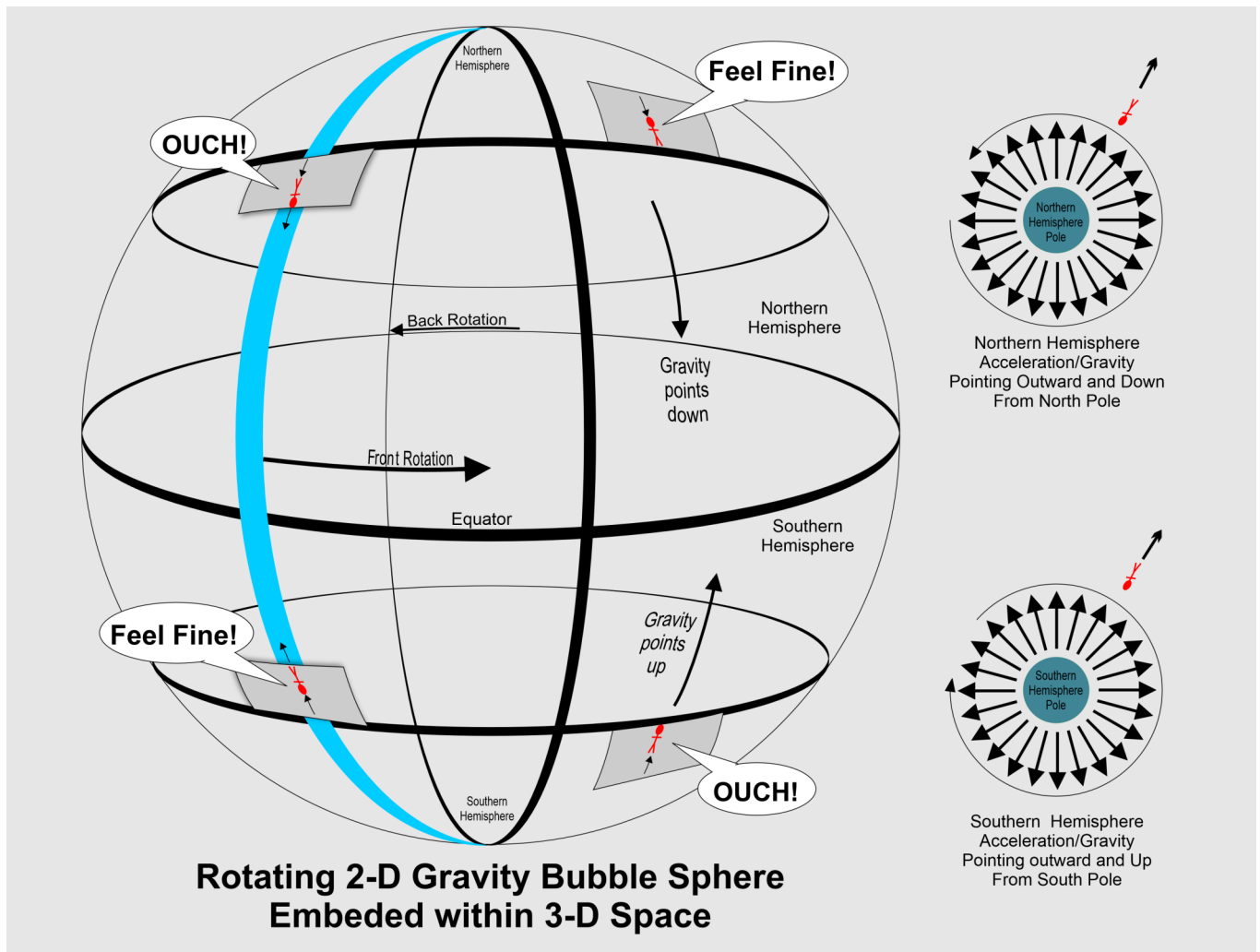


Orion Works Sonova Quark

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Choose Your Universe Carefully

A Metaphysical Tale of Sorts



On a recent afternoon walk I tried visualizing gravity in a way that make sense to me. I recalled the famous space station in Kubrick's film, *2001 A Space Odyssey*. The rotation of the outer rim causes a constant change in velocity. Changes in velocity result in changes in *acceleration*. These terms, *velocity* and *acceleration*, are well-known terms used in Calculus

when formulating *derivatives* and *Integrals*. Fortunately, we don't have to go there! All we need to know is that a change in velocity produces acceleration. Space faring passengers on Kubrick's space station would seemingly experience the effects of *acceleration* due to the centripetal rotation of the outer ring. But most of us mortals tend to define

the station’s centripetal forces as a form of *artificial gravity*. We call it artificial because we don’t usually think of the station’s rotation as causing acceleration at the outer ring, even though it does. While standing on Earth we mortals would need to visualize the ground below our feet as actually accelerating, or expanding upward towards the sky. If it did, in no time our exponentially expanding planet would smash through the orbit of our Moon, and soon afterwards engulf the rest of the solar system. It gets worse. All the planets, stars and Galaxies would be expanding too and eventually crowding out all the precious vacuum in outer space into one ever expanding gigantic bowling ball.

But Einstein informs us that *gravity* and *acceleration* are exactly the same phenomenon of nature. So how can we visualize gravity in such accelerated terms? We certainly don’t observe the effects of acceleration causing all the mass in our universe to expand, getting exponentially bigger and bigger. The only thing that is expanding exponentially is the vacuous fabric of outer space itself. I felt overwhelmed trying to visualize this contradiction. Eventually, I let go of the effort as simply too difficult to Grok. I continued my afternoon walk. Soon my mind wandered off into imaginary territories where I was no longer manning the steering wheel.

Suddenly, out of nowhere, I visualized a rotating bubble sphere floating about in outer space. I perceived it as a vast closed Universe containing only two dimensions. It also rotated, meaning it possessed an axis. This rotation caused all 2-D objects (and 2-D creatures) to experience changes in velocity, aka acceleration, aka gravity, depending on where they resided within the sphere. They certainly would not experience gravity in the same manner we 3-D habitants would experience it. Assuming a North and South pole, gravity would be experienced as either a downward force in the northern hemisphere, and as an upward force from the southern hemisphere. Weightlessness would be experienced at either poles as well as at the equator. Gravity everywhere else would be experienced as constantly “gravitating” towards the equator. If there were no impeding obstructions to stop free floating masses as they approached the ring of the equator they would simply pass through and soon afterwards begin gradually experiencing the effects of gravity in the opposite direction, pulling them back towards the equator again. This would result in all free

moving 2-D objects endlessly seesawing back-and-forth between the Northern and Southern hemispheres. It gets worse. We also have Coriolis forces to deal with. Free-falling objects would most likely pass through the equator at a slant. Meanwhile, objects headed towards either poles would also tend to veer off in a sideway direction, but in the opposite slant-wise direction as seen near the equator. Stationary observers, on the other hand, would experience gravity as pointing either straight down (In the Northern hemisphere) and upwards from the Southern hemisphere. The strongest force of gravity would be experience somewhere near the 45th degree latitude as drawn downward from the North Pole, and upwards from the South Pole.

These 2-D observers would have no idea that their universe is rotating, as perceived from our 3-D orientation. All they could perceive is that there appear to be two tiny locations where weightlessness had been mapped, as well as at a mysterious never-ending border, an imaginary straight “line” where everything outside of that linear border seems to be mysteriously attracted towards.

I felt compelled to grab my inner steering wheel. I was glad I wasn't a 2-D sentient creature living at the 45th latitude taking his daily walk. Realizing our scientists had discovered weightlessness exists at two inconsequential locations, as well as within a linear boundary that stretches into infinity... where all free moving objects are attracted towards, but at a slant... It gave me vertigo.

Or



Zoey supervising the rolling-up of packing material.

Tag Along

Darlene P. Coltrain

Tagalong Responds...

Carrie

Wrapped up? Haha... carried away too, occasionally...

I never had a problem with my crochet hooks, one of them metal and quite long, but I know knitters who had to give up their knitting needles...

Andy

Heh. Hardly eccentric? Well, it's still a rather obscure branch of crochet... I guess if it's glossy enough it will pass...

Thank you for the kind words, I do love playing with color and crochet is a good excuse.

Also, I don't like to go on about this, but it is a bit of a trial to have a name that is spelled differently by someone famous... Maybe I'm just not famous enough (?), but the name is Coltrain when it applies to me or my excellent ex or our fabulous daughter.

Steve S.

Thank you for the kind words...yes... quite mad...

Cathy

Thank you for the lovely compliment!

Yes, it's work but relaxing and a joy with the colors to play with and WARM to work on in winter! Tunisian crochet is generally a double layer of stitches so it is a bit more dense than the regular version of crochet that lends itself to a more open and lacy product.

The cats are very good about not attacking my yarn and would rather sleep on finished items than shred them. They must be old and lazy... well, not really, they both were good about it, although Charm needed a few reminders when she was young and foolish. They have a collection of cat mats of their very own and mostly sleep on them, shed freely on them... occasionally barf on them...



