Sonova Quark

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Revisiting the 2D Sphere: Was my essay on 2-D spherical physics correct? Did I miss anything? I can't be my own judge and juror on such matters. Several have raised questions about what happens. Here are my best thought-out responses

Jeanne G: I had not thought about using a rotating a *2001 A Space Odyssey* space station to explain "artificial" gravity. What I do feel confident about predicting is that that if someone were to drop a marble to the floor, let's say five feet above the floor, the Coriolis forces from the rotating station would cause the marble's fall to, ever-so-slightly, curve in the opposite direction of the station's spin. The marble is still "falling" in a straight line down, but the reorientation of the rotating space station gives the observer the illusion that the marble is curving, when actually it's the observer who is turning in lockstep with the rotating space station.

Here's another vision. I'm more inclined to demonstrate a constantly accelerating cosmic elevator in outer space where a beam of light is fired one foot up from the floor. The beam of light is calibrated to hit the opposite wall, which is ten feet away, precisely at one foot above the floor. At what height will the beam of light hit the opposite wall? Above, precisely at, or below the one foot mark above the floor? Answering this question demonstrates a phenomenon that resulted in proving one of Einstein's most controversial theories. Any takers? I'll give my response in August's Turbo.

Georgie: I'd like to believe that the imaginary spherical 2D beings would adapt to their unique environment as well. Then, perhaps I can take my hand of my chest, and breathe more easily.

Andy: It all comes down to a matter of perspective. Your description of a flat disk (or merry-go-round) becomes more accurate the smaller the inhabitants are compared to the curvature of the sphere… or bigger the spherical sphere is compared to inhabitant's size. The greater the size ratio difference is between the sphere and the inhabitants the curvature would diminish to insignificance and appear flat, just as the surface our oceans appear flat to us 3D inhabitants. With the aid of Fig 2 (next page) my suggestion is to imagine the diameter of your envisioned spinning record as expanding, and then gradually curving downward until the angle is pointing 90 degrees, straight down. The edge of the record would be touching the equator of the sphere. At this point there would no longer be any outward forces, as experienced by anyone hanging on to the merry-go-round. Then rotate another 90 degrees for a total of 180 degrees (south pole). At this point the edges of the LP meet up with each other. Then, rotate another 90 degrees (back up to the equator), and one more time!!! Another 90 degrees. (back up to the North Pole and you'll end up with one very odd looking LP or merry-go-round. ALL free floating objects will tend to gravitate towards the equator, then miss shoot past the equator. However, assuming friction exists on the bubble sphere, free floating objects will gradually end up resting

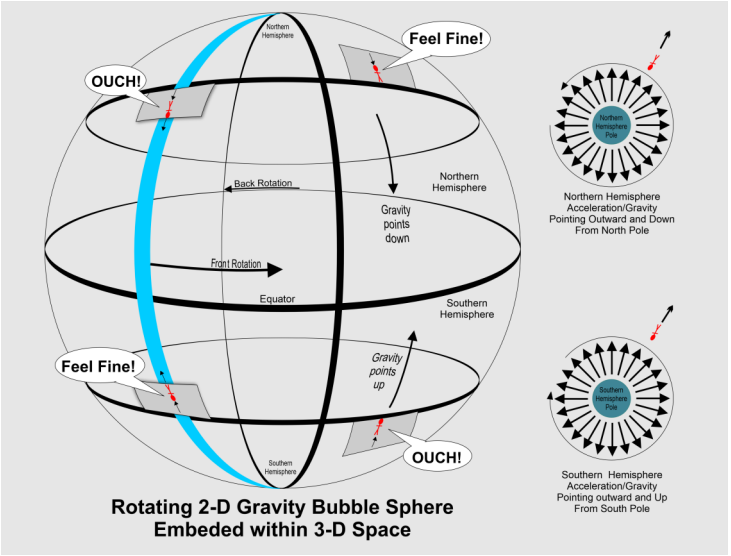

Fig 1

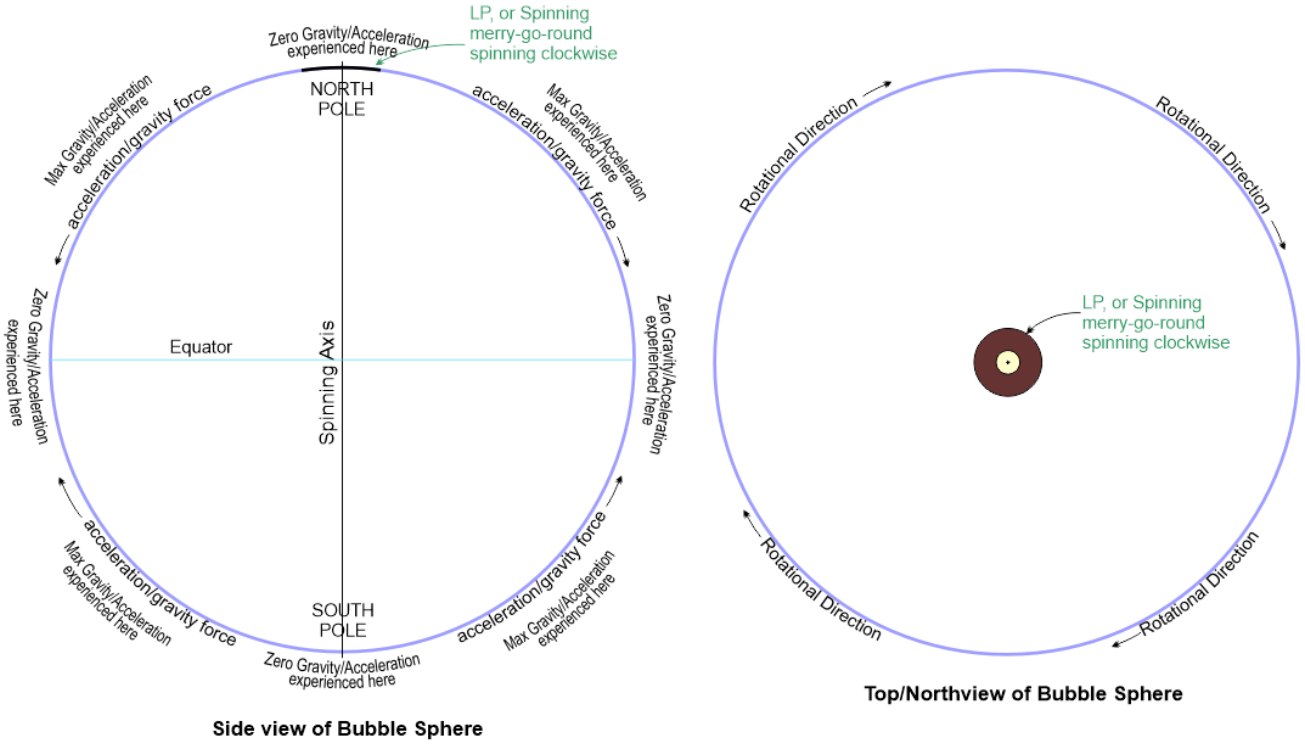

Fig 2

more-or-less on a very crowded equator. So, in a sense you are right. Eventually they won't end up back at the beginning!

Jim & Diane: I had not considered what "mass" might exist within the 2-D surface itself. It's an interesting conundrum. Let's posit, just for the hell of it, that 2-D mass does exist. In which case, I'm inclined to think your conjecture does need to be taken into account. Good call!

Other stuff: Turbo's membership has been increasing lately. That's good news. It helps stimulate the creative juices of all its members. I occasionally feel guilty that I haven't responded much to the many creative contributions of others. But that doesn't mean I haven't viewed or read them. OTOH, I've been able to make a contribution just about every month since I came back to TURBO. This seems to be some kind of personal promise I made to myself that I want to keep. Turbo is important. That's how I honor it.

Please, sir, can I have some more?

This was placed out on my FB page a week ago. It got a lot of likes. Definitely a lot of cat fans out there.