

Flat Out Wrong – Why Flat Earth Is Such An Appealing Model?

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Introduction

Every day, before the COVID hit, well over 100,000 flight plans were filed in the world's air traffic control systems for all kinds of flights. Some were just short hops between neighboring cities whereas others were very, very long—spanning continents and crossing vast oceans around the world.

Not a single one of those flight plans is created according to the assumption that the Earth is flat.

So why do we have all this recent and apparently still growing fuss about the true form of our Mother Earth?

I came across this weird claim that the Earth was flat by stumbling on one of the related videos on YouTube. The video referred to a flight path projected on the common Mercator projection map, “proving” that an emergency situation involving a commercial airliner clearly forced it to land far from the nearest available airport, and thus the Earth has to be flat.

It may actually be a surprise to many of us how the familiar Mercator projection unavoidably distorts the view when it is used to depict the whole world. Try making a square of the peel of an orange and you can see in practice how this kind of one-to-one mapping can have problems. But in this particular case, the resulting, seemingly inconsistent flight path appeared to match nicely with the “standard” view of a flat Earth.

So there it was, according to the ecstatic narrator of the video: an “absolute proof” that the Earth is flat.

And as is the norm these days, this video was followed by a “you might also like”-list of numerous, slick videos supporting the flat Earth claim. This was all rather strange because Earth was shown to be round more than 2,000 years ago, using nothing more than sticks, shadows and some basic arithmetic.

I had considered the concept of flat Earth as merely a joke, so the number of these videos surprised me. They were clearly mushrooming on YouTube, with fresh videos coming out quite frequently. Many of them had hundreds of thousands of views. To my astonishment, these folks were even holding international conferences on the issue, apparently with a straight face.

I was really amazed by the volume of this nonsense. How could this be considered as anything else than loosely factoid-based light entertainment along the lines of *theonion.com*?

As I have a Private Pilot’s License with Instrument Rating, I have been exposed to the Globe Earth Model of navigation in the real world. Often I’ve had to rely solely on my navigation instruments due to zero visibility, yet every time I finally punched through the clouds, the airport was exactly where it was supposed to be. In many occasions like this, an error of just a couple of tens of meters would have been lethal. Therefore, based on this concrete and personal experience, I have no doubt in my mind about the Earth being a globe: the reason

why flight plans are never filed following some “Flat Earth navigation rules” is simply because such rules do not exist.

The only book referring to “Flat Earth navigation” is a 16-page reprint of a 100-year-old rant of pitiful nonsense. Whereas if you type “air navigation” into Amazon's book search, more than 1,000 titles pop up. All of them explain the same globe-Earth navigation basics that are built in to every piece of navigation equipment in the world.

While I was wading through the prolific jungle of flat Earth presentations, I grew increasingly curious about this new trend. How is it that we live in a world in which rockets head to space almost daily, and endless streams of images of our round planet pour down from weather satellites around the globe, yet hundreds of thousands, if not millions, of people seem to think otherwise? And that this group appears to be increasing, not decreasing?

History

When you investigate the flat Earth material, the word *zetetic* pops up over and over again. This word first came to prominence in the 19th century, when Samuel Rowbotham wrote his book *Zetetic Astronomy: Earth Not a Globe*, promoting the view that the Earth is flat.

His zetetic approach is the cornerstone of all Flat Earthers and it simply means that you only rely on your own observations and tests, ignoring any pesky science that might contradict what you personally experience.

In short, “what you see is what you get.”

There is nothing wrong with this approach in most cases, except that the zetetic approach injects the notion of confirmation bias into the process. This means deciding first what you want to find, and then finding observations that support your desired outcome. If something appears to contradict your claim, ignore it.

Therefore, even if not a single flight plan in the world follows the zetetic view that the Earth is flat, it does not matter. If your own observations of a small subset of the reality around you indicate that the Earth is flat, that is an entirely valid conclusion to draw.

The zetetic approach in its purest form is the counter-process of established scientific research, in which you first study all possible aspects of a phenomenon and only then try to find a model that matches all of your observations. Then you actively try to come up with results that force you to further refine your model until you are left with the most plausible explanation, backed by overwhelming evidence.

Unfortunately, there are several observations that can be explained by both the Flat Earth Model and the Globe Earth Model, and these snippets of overlapping reality are widely exploited and constantly brought up by the self-proclaimed masters of the Flat Earth Movement.

Another “historical reference”, of course, is the Bible. Many Flat Earthers take a verse or two out of context, or interpret it very loosely, and base their view solely on the “word of God”. As with anything based on religious beliefs, nothing would make these “book believers” change their minds. You can’t fight faith with facts.

The biblical viewpoint is actually more opposed to the heliocentric model, which kicks Earth from its assumed position as the center of the Universe. This radical demotion greatly diminishes the perceived importance of the planet on which we live. The assumed flatness of

Earth is just a derivative side product of the need to feel more important in this chaotic Universe.

It is fair to note, though, that at least the Catholic Church does not share the flat Earth view any longer. The embarrassing clash between the Vatican and Galileo Galilei was finally settled in 1992, when the Vatican officially admitted that the heliocentric model promoted by Galileo was the correct one, and that punishing him with house arrest 350 years ago was wrong.

Better late than never. Even if it is very late.

The Issue of Indirect Proof

A lot of the Flat Earth material is very slick and superficially does not contradict itself too much, unless you start scratching the surface. So it's quite understandable that even those of us who should know better may be tempted to "think different" when the "indisputable evidence" is presented to us with flawless editing and an uplifting soundtrack. This is further enhanced by the fact that even some celebrities now sing the praises of flatness.

The reality of us dwelling on a giant ball is by no means obvious. Our physical relationship to the curvature of our home planet is about the same as a 5 mm-tall ant walking on a ball with a diameter of 140 km.

Would you expect the ant to notice that the surface of that ball is curved?

Yet, the obvious cues are there, but they are still easy to overlook, as they tend to require some deduction: we are required to make a mental "1 + 1" instead of just being handed a "2" to look at. Therefore, even if you have already accepted the globe form of the Earth, you might wonder about the lack of plain and simple cases that make the curvature obvious. There's no doubt that seeing is believing, and there are not too many directly relatable things to "see" regarding the form of our planet..

Daily images streaming down from space should be obvious proof, but only if you believe that "space" exists, which is another dilemma altogether: some of us appear to think that we have a multi-billion dollar business of space exploration that is solely created to deceive us from the true nature of our home planet. So any images of a Tesla Roadster with the sphere of the Earth on the background are only secondary and not personally observable proof, requiring another set of parameters to be believed in first.

Not many of us have had the privilege to fly a business jet on flight level 450, an altitude of almost 14 kilometers at which the curvature of the horizon starts to become very apparent. To make this kind of experience available to those of us with deeper pockets, Virgin Galactic is about to start taking paying tourists to the edge of space. But can you really prove that the windows on those "space planes" are not just elaborate 3D-displays, and the weightlessness is created by similar means as with the "Vomit Comet" flights?

Thankfully there are some obvious mysteries that are hard to explain with a Flat Earth: anyone living near to a coast of a major body of water can use binoculars to observe how boats appear to "sink" as they move further away from the shore, finally leaving only a trail of smoke rising from the horizon. And if you stand on the Western shores of Ireland on a pristine clear night, you might wonder why you can't see the glow of New York's lights in the horizon, even with the biggest of telescopes you can buy?

There are also cases where cities with high-rise buildings are close to each other, separated by vast amounts of flat areas. Even in these cases, the buildings in the distance seem to have lost a couple of their lower floors, yet the missing floors are still magically there when you drive over to visit the place.

Similarly, if you come to think of it, it is hard to figure out where the Sun goes during the night, if it is supposed to move in a circle over a flat plane. Compare that situation with a large warehouse having just one lamp hanging from the ceiling: wherever the lamp is in relation to you, it never disappears from sight, and the Sun is one heck of a lamp.

And while we are thinking of the context of the Sun, what keeps such a bright, glowing globe hanging up there above our heads?

“It’s the Internet, Stupid!”

We live in the Golden Age of Information. Never before has it been as easy to fact-check something like it is today. Wherever you are, you can pull out a Smartphone and do a simple search over a contested matter.

Or is it?

An immediate issue here is the fact that the person who comes across a new link on the web often lacks the necessary skill to assess the quality of what she sees: a slick web page full of nonsense but received by you via the Facebook feed of your beloved but somewhat eccentric Aunt Jeanine may appear equally trustworthy as a scientific peer-reviewed paper from a multi-billion dollar budget research organization. Add to that the tendency of seeking material that matches your own personal echo chamber and it is way too easy to end up following the path of seemingly cross-referential junk down the rabbit hole.

The Information Age has provided us the tools, but we appear to lack the knowledge on how to use them. We are clearly living in times when newly found ignorance is bliss, despite the fact that we have better access to information than we have ever had during the whole existence of the humankind.

One alarming thing that is immediately obvious in the ongoing, online skirmish between “globetards” and “flattards” on the Internet is the fact that it is extremely acrimonious. Both sides have no problem getting personal in the first few seconds of their YouTube videos.

I don't think this is very productive: calling people idiots is not the best way to try to convince anyone. Actually, I think that the biggest mistake the Globe Earth Model supporters do is their apparently endless and open disgust towards the flat Earth supporters, however valid it may feel. You have lost your case the moment you move to personal insults, even if you otherwise have all of your fact-based ducks in the neatest of rows. There are only a handful of us “globetards” who keep cool and patiently stick purely to facts; even under a barrage of personal insults from the opposing camp.

But we should not overdo it either. Far too often we jump into the realm of mathematics and formulas in our explanatory material, relying on issues that are very unfamiliar in people's daily lives. The hardest math most of us face these days is calculating the tip for the meal we just had. Pushing a formula that contains *arctan* or a *square root* is close to pointless. The way to get your message through is by using references to everyday events that everyone can relate to, not by trying to “blind them with science.”

And finally, there is the issue of faith and mental self-perception. For some of us, it can be hard to accept the fact that we are just one out of eight billion humans, living on a ball that is circling an average star in a galaxy of hundred billion other stars, in a universe consisting of hundred billion other galaxies. The insignificance that this may bring up in an individual may be too hard to bear, and staying in a Flat Earth cocoon of importance is the way out.

It is more comforting to think that the universe is circling around us, not us aimlessly hurdling through it.

Conclusion

The fact that the Earth is a globe has been common knowledge for over 2,000 years. A Greek astronomer, geographer and mathematician called Eratosthenes proved this by just comparing the behavior of a shadow of a stick between two Egyptian cities during the Summer Solstice.

Medieval sailors understood this, and used the changing view of the stars to their advantage during their voyages. Like Columbus, also Magellan embarked on his voyage with a clear plan to find a new path to distant countries because he knew that the world was round. The meticulous logbook entries of the only returning boat in the Magellan expedition were found to be off by one day, as they had crossed the date line during their circumnavigation of the Earth, thus providing yet another proof that our world is a ball.

This happened in 1522, yet some still hold on to the Flat Earth Model, 500 years later.

Any long-range navigation by any means is only successful if the roundness of Earth is part of the calculations, and any pilot who claims to be a “flat Earth pilot” on the Internet is just a hoaxer with captain’s stripes bought from the nearest aviation store. Surveyors know that they have to adjust their calculations based on the curvature of the Earth for longer stretches. Even snipers are taught to consider the Coriolis force caused by the rotation of the Earth.

Let’s stop and think about this for a while: if you want to kill someone from a distance, you have to believe that the Earth is round and spinning.

On a war zone, it would be deadly to be a Flat Earther.

ABOUT THE AUTHOR

Petri Launiainen is the author of “*A Brief History of Everything Wireless – How Invisible Waves Have Changed the World*” (available also in Chinese and Finnish), and “*Flat Out Wrong – the Overwhelming Evidence against Flat Earth*”.

He currently works as the CTO for Datumize in Barcelona, Spain.