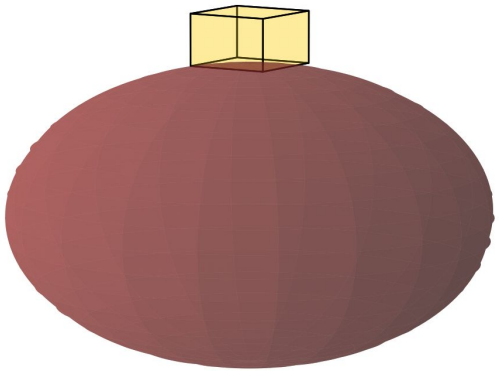
Visualizing the Geometric Relationship Between New Jerusalem & Earth



Data analysis performed by:

Peyton Hall

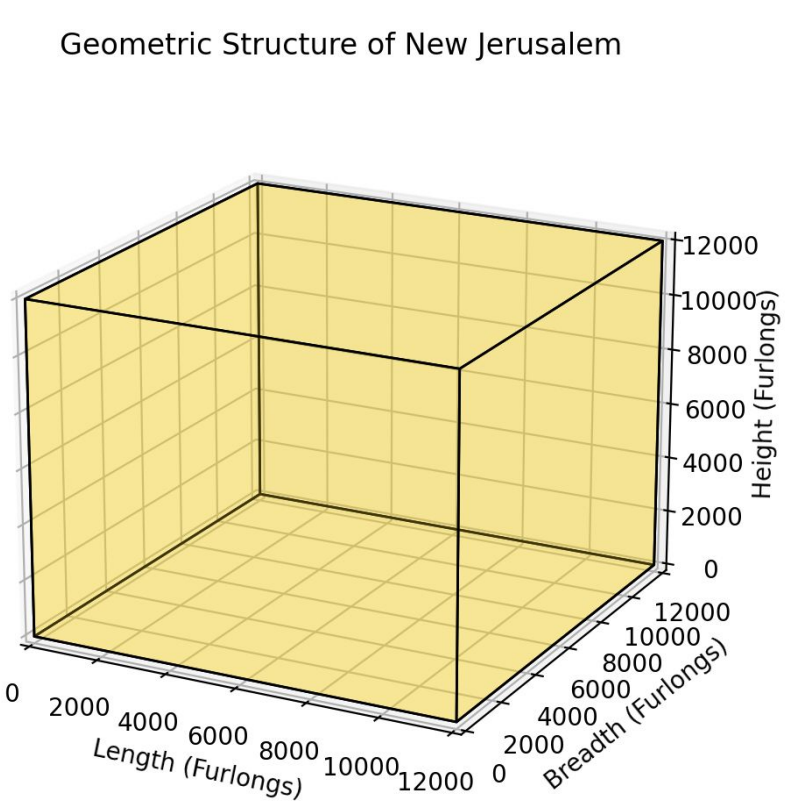
Statement of Purpose

In terms of geometry, curiosity arises after reading verse 16 of chapter 21 of the book of Revelation:

Revelation 21:16 KJV “And the city lieth foursquare, and the length is as large as the breadth: and he measured the city with the reed, twelve thousand furlongs. The length and the breadth and the height of it are equal.”

This perfect cube is exemplified by *Figure I*. One might wonder how, or if, that would fit on the earth.

[Figure I]



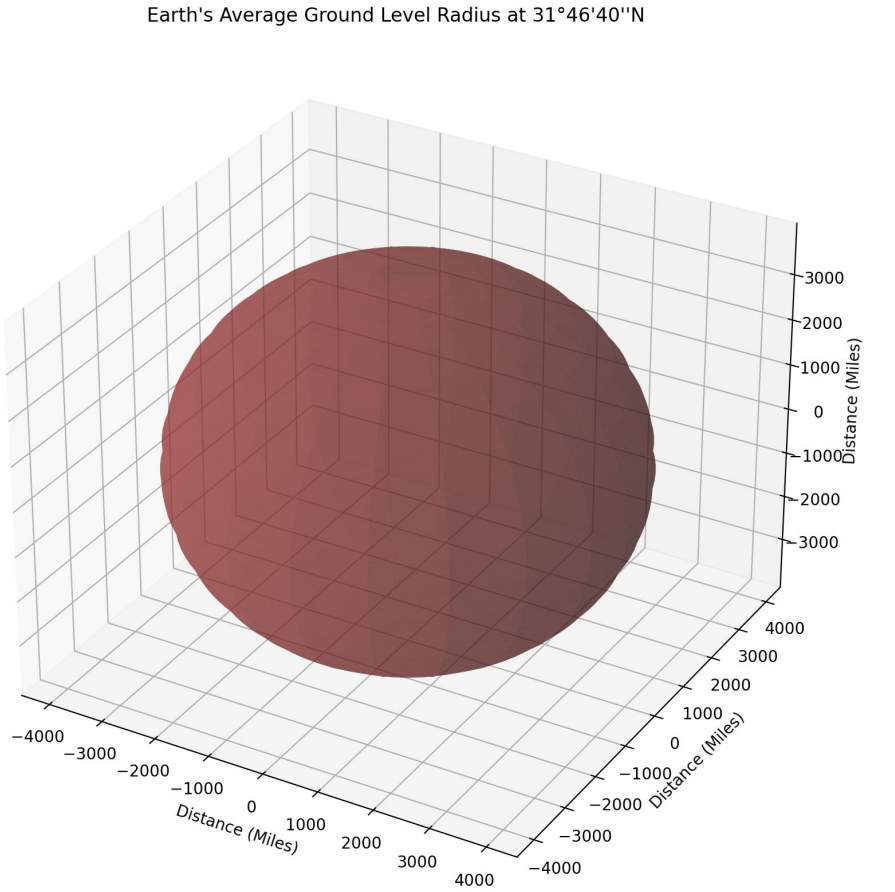
Concept Analysis - Heaven On Earth

Based on the following passages, let us assume this perfect cube merges with the earth at mount Zion (31°46'40"N 35° 14'07"E):

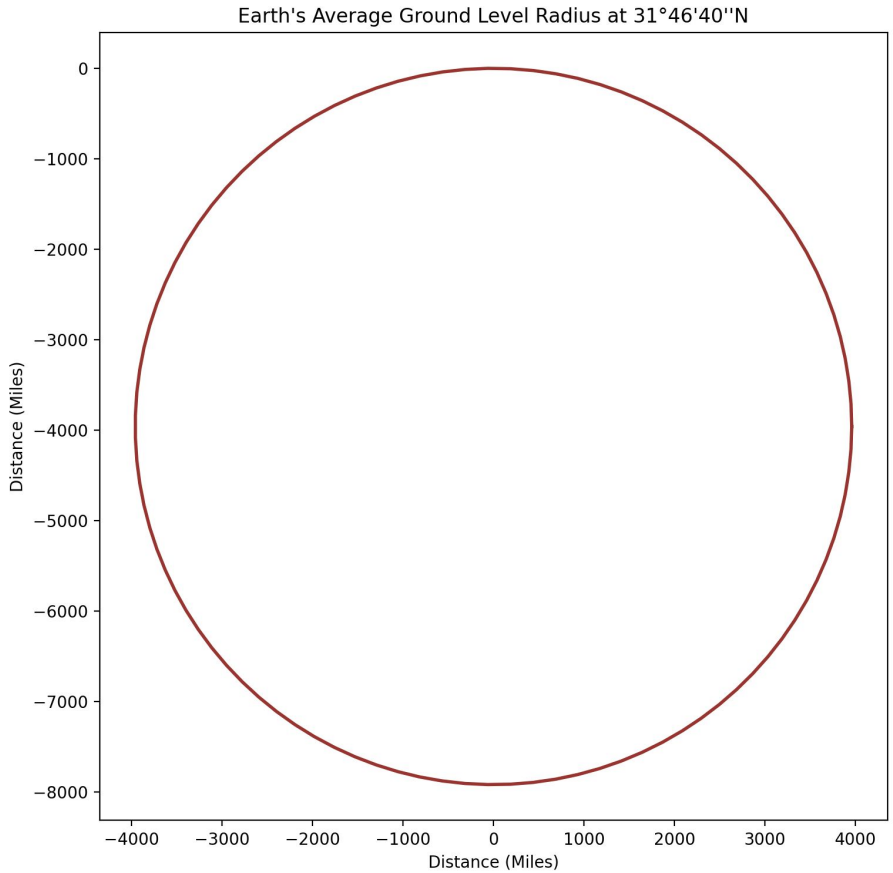
- Psalm 118:20 “This gate of the LORD, into which the righteous shall enter.”
- 2 Esdras 13:36 “And Sion shall come, and shall be shewed to all men, being prepared and builded, like as thou sawest the hill graven without hands.”
- Isaiah 46:13 “I bring near my righteousness; it shall not be far off, and my salvation shall not tarry: and I will place salvation in Zion for Israel my glory.”
- Isaiah 60:11 “Therefore thy gates shall be open continually; they shall not be shut day nor night; that *men* may bring unto thee the forces of the Gentiles, and *that* their kings *may be* brought.”
- Revelation 21:1 “And I saw a new heaven and a new earth: for the first heaven and the first earth were passed away; and there was no more sea.” New: καινός (G2537) “kahee-nos'” – Bring all things into a new and better condition.
- Revelation 21:12 “And had a wall great and high, *and* had twelve gates, and at the gates twelve angels, and names written thereon,which are *the names* of the twelve tribes of the children of Israel:”
- Revelation 21:13 “On the east three gates; on the north three gates; on the south three gates; and on the west three gates.”
- Revelation 21:25 “And the gates of it shall not be shut at all by day: for there shall be no night there.”

Size of the Earth

At 31°46’40”N latitude, where mount Zion stands, the earth's average radius at ground level is approximately 20,906,306.39764 English feet, or 3,959.527726825757782 miles [verifiable by Geographic Information Science calculators such as Rechneronline and Planetcalc]. The earth is an oblate spheroid; it is not a perfect sphere due to mountains, ocean depths, hills, etcetera. However, with dimensions consisting of thousands of miles, the earth is very much similar to a perfect sphere. To represent the earth as a sphere, it can be graphed with its average radius at ground level at the line of latitude which passes through mount Zion. See *Figure II* & *Figure III*. This will be the foundation of the data visualization comparing the size of the 12,000 furlong cube to the earth.



[Figure II]



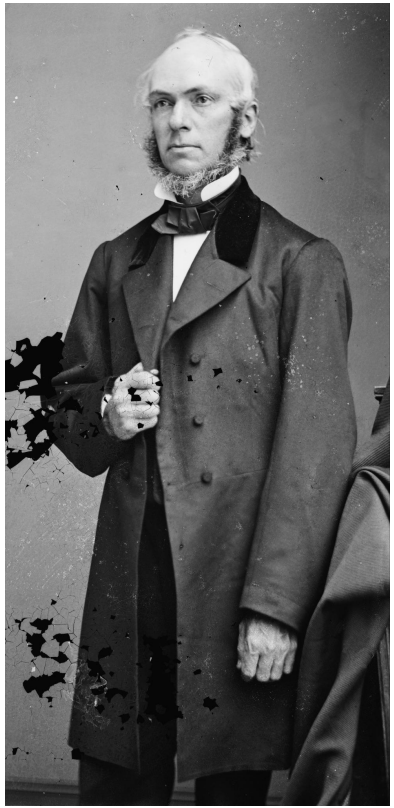
[Figure III]

What Is a Furlong? How to Know:

In the manuscripts, the Greek word στάδιον (pronounced “stad'-ee-on”) occurs five times, translating as “furlong” to the English tongue. In the “*Strong’s Exhaustive Concordance of the Bible*”, James Strong identifies this word, στάδιον, as Greek # 4712 in the New Testament. The “*Thayer’s Greek-English Lexicon of the New Testament*” is an extension of Strong’s concordance, produced by Joseph Henry Thayer. In it, Thayer defines a furlong as thus:

“1. a measure of length comprising 600 Greek feet, or 625 Roman feet, or 125 Roman paces (Pliny, h. n. 2, 23 (21), 85), hence, one-eighth of a Roman mile (i. e. 606 3/4 English feet (about 15 miles less than one-fifth of a kilometer))”

“2. **a race-course,** i. e. place in which contests in running were held; the one who outstripped the rest, and reached the goal first, receiving the prize: 1 Corinthians 9:24 (here A. V. **race**). Courses of this description were to be found in most of the larger Greek cities, and were, like that at Olympia, 600 Greek feet in length.”



James Strong [Figure IV]

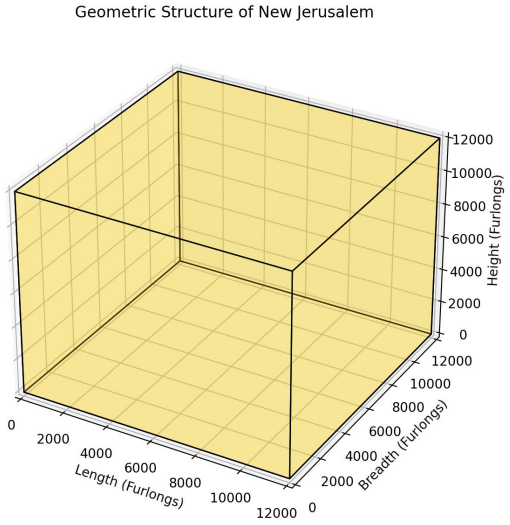
Joseph Henry Thayer [Figure V]

Convert Units

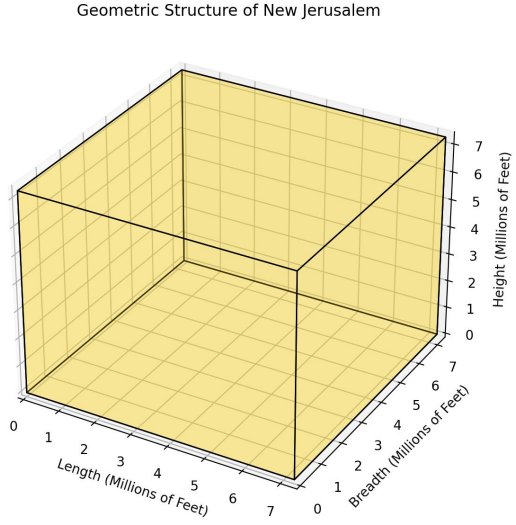
1 Furlong = 606.75 English Feet = 0.114914773 Miles

12,000 Furlongs = 7,281,000 English Feet = 1,378.977276 Miles

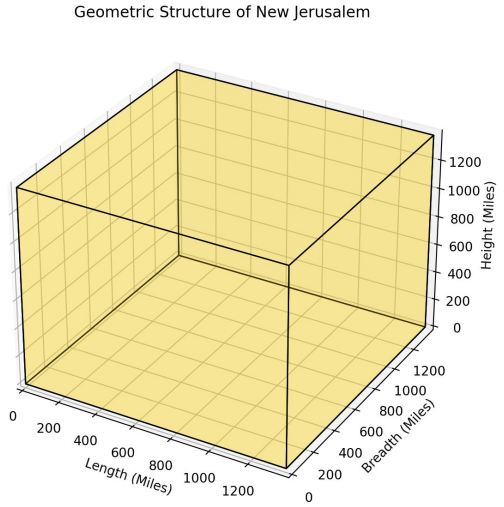
12,000 x 12,000 x 12,000 Furlongs
[Figure VI]



7,281,000 x 7,281,000 x 7,281,000 Feet
[Figure VII]



1,378.97 x 1,378.97 x 1,378.97 Miles
[Figure VIII]

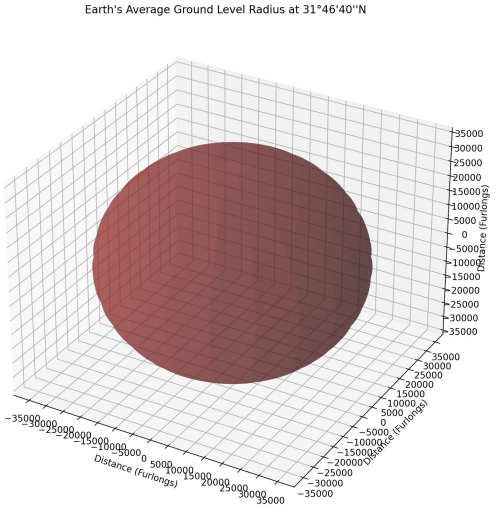


Convert Units

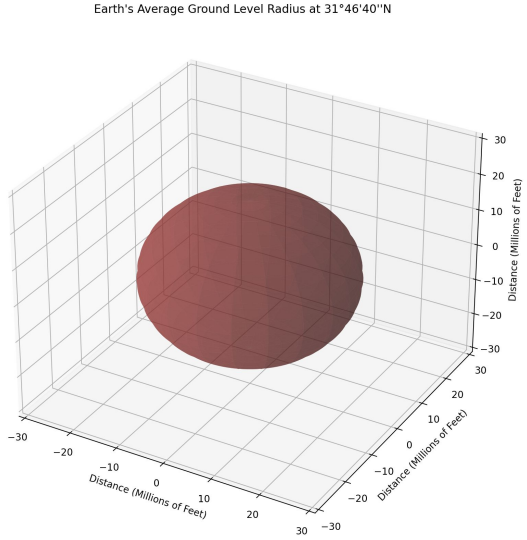
1 Furlong = 606.75 English Feet = 0.114914773 Miles

34,456.21161539 Furlongs = 20,906,306.39764 English Feet = 3,959.527726825758 Miles

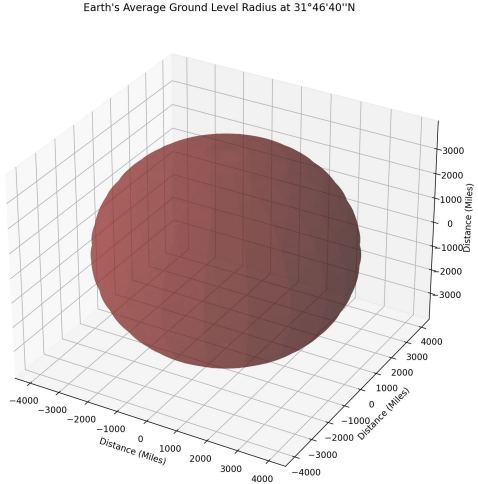
34,456.21 x 34,456.21 x 34,456.21 Furlongs *[Figure IX]*



20,906,306.39 x 20,906,306.39 x 20,906,306.39 English Feet *[Figure X]*

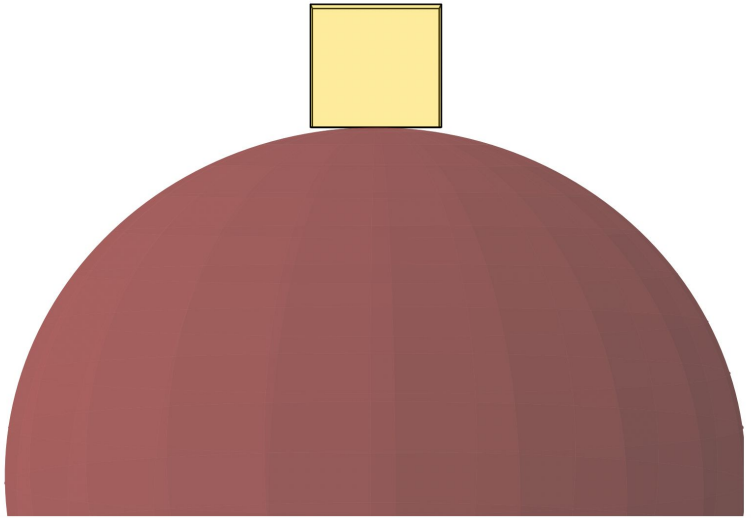


3,959.52 x 3,959.52 x 3,959.52 Miles *[Figure XI]*



Inaccessibility

If a perfect cube, of this gigantic size, were to merge with the earth, being an oblate spheroid, the extent in which the entire perimeter of the base of the cube is elevated off of the earth would make it impossible to walk through the gates. This inaccessibility is emphasized by *Figure XII*. That is the case unless if a series of ramps or staircases were in place to provide access in and out of the cube.



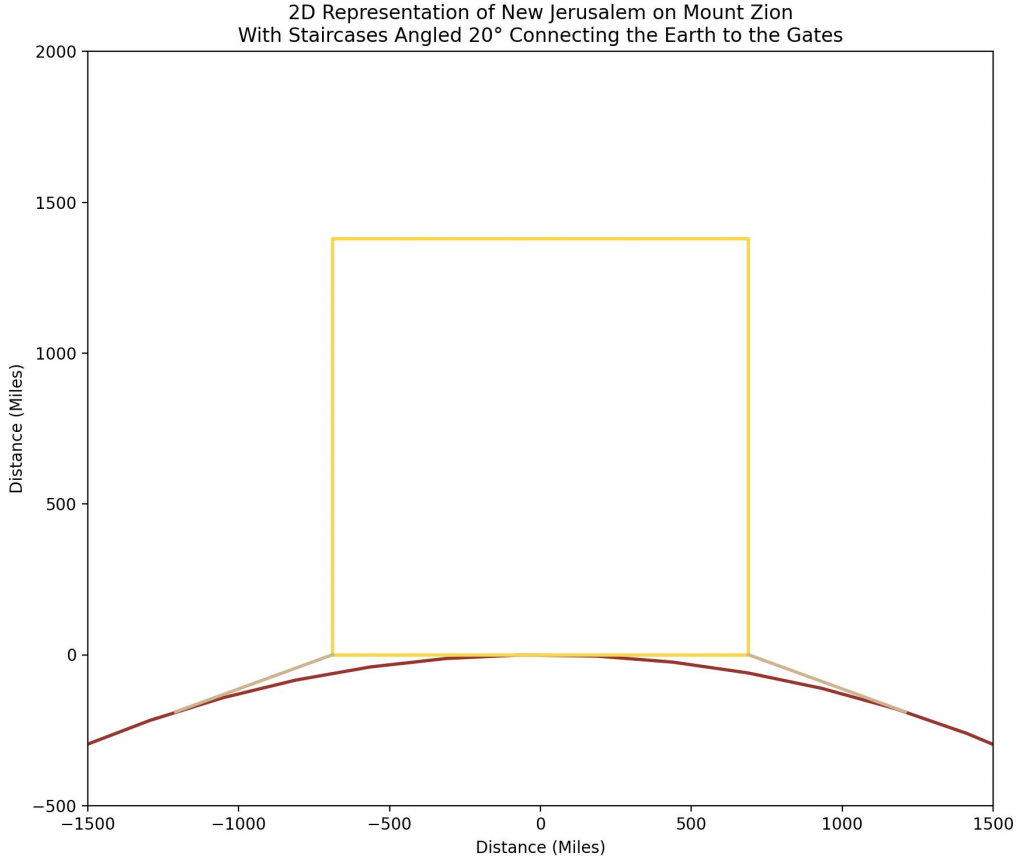
[Figure XII]

Ramps/ Stairs Angled 20°

If New Jerusalem were to merge with the earth, it seems most plausible that ramps/ stairs would be angled at 20° from the cube. A 20° angle is not steep, yet it would still intersect the earth.

The length of these ramps/ stairs, extending from the midpoint of the sides around the perimeter of the base, would be approximately 552.626413561

$$d = \sqrt{(-689.488 - -1208.782)^2 + (0 - -189.023)^2}$$



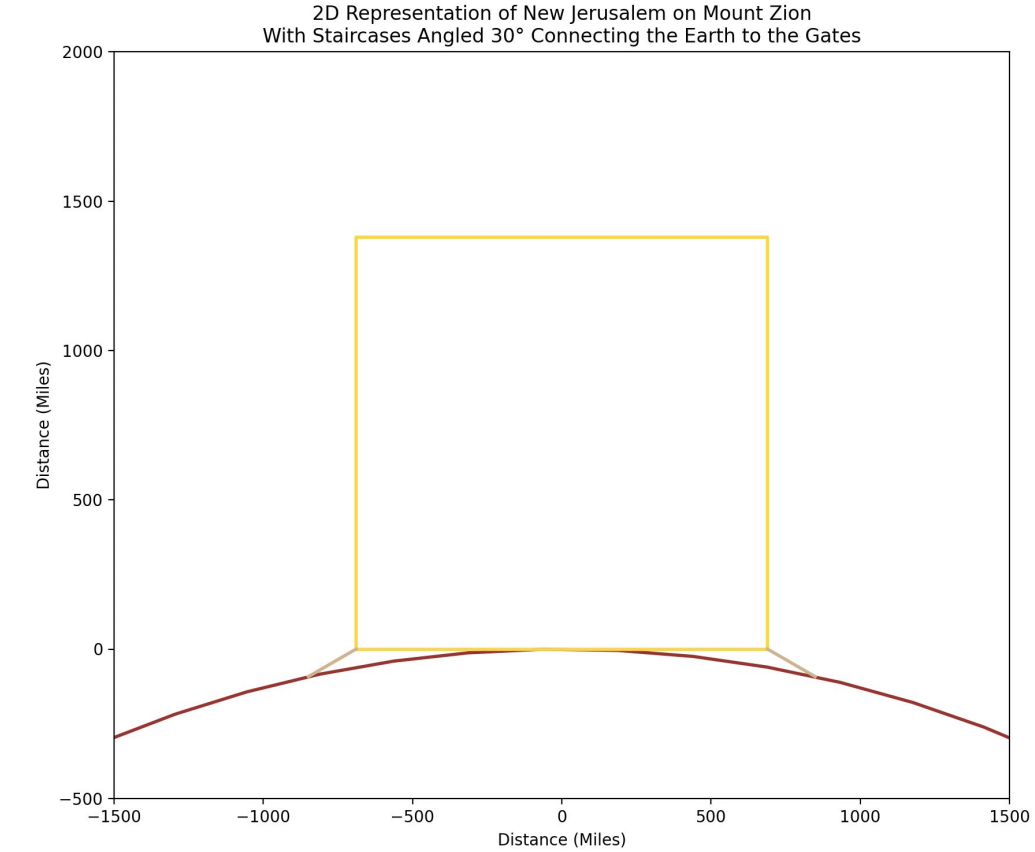
[Figure XIII]

Ramps/ Stairs Angled 30°

Revelation 21:13 mentions that there will be three gates on each side. Depending on how spaced out these gates are from each other, ramps/ stairs angled at 20° from the cube might not be steep enough.

The length of these ramps/ stairs, extending from the midpoint of the sides around the perimeter of the base, would be approximately 184.182614082

$$d = \sqrt{(-689.488 - -848.995)^2 + (0 - -92.091)^2}$$



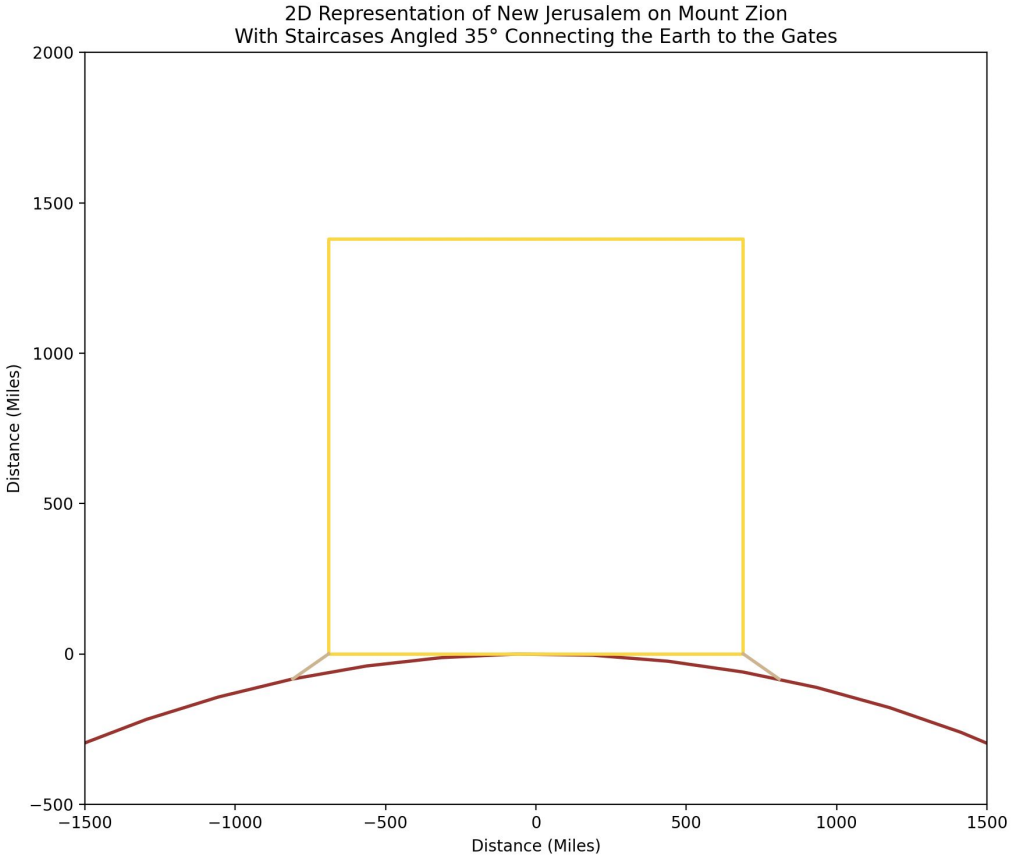
[Figure XIX]

Ramps/ Stairs Angled 35°

It is common for staircases to be angled at 35°; however, this angle would be very steep for ramps. Depending on on how spaced out the gates are from each other, ramps/ stairs angled at 35° from the cube may be necessary.

The length of these ramps/ stairs, extending from the midpoint of the sides around the perimeter of the base, would be approximately

$$d = \sqrt{(-689.488 - -808.683)^2 + (0 - -83.461)^2}$$

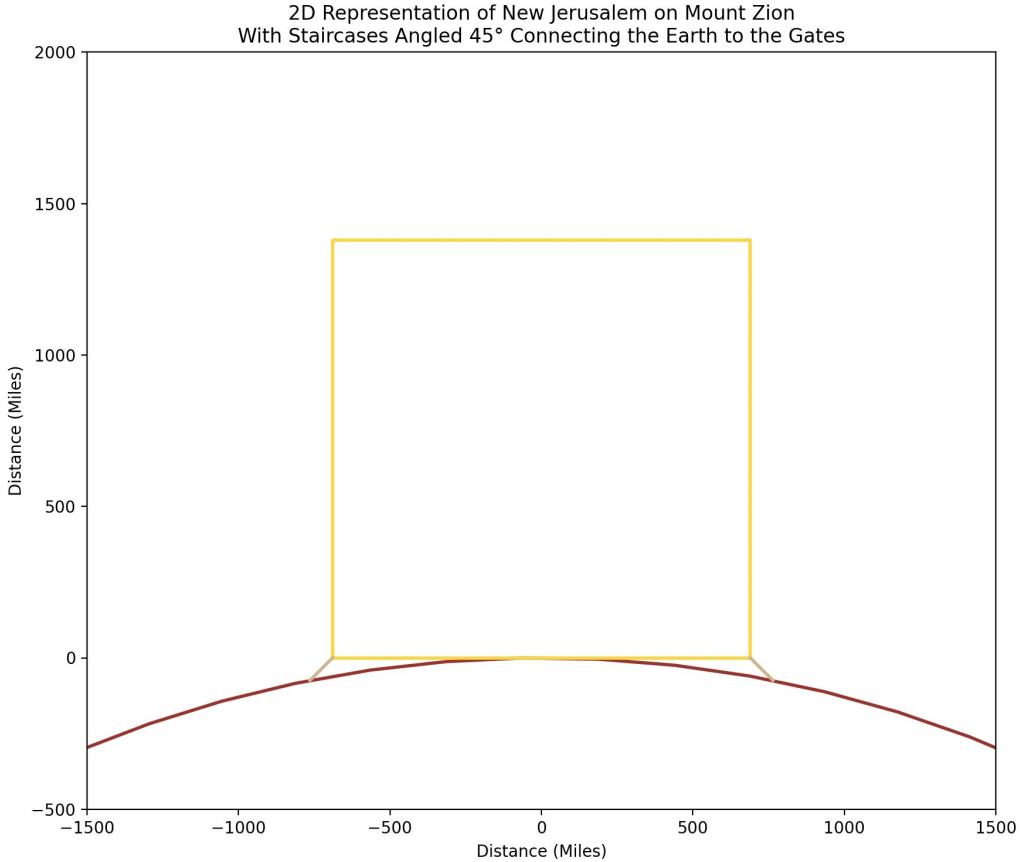


[Figure XX]

Ramps/ Stairs Angled 45°

Finally, it is possible for the staircases to be angled 45° coming straight out from the gates. This would be very steep, but it is geometrically possible.

The length of these ramps/ stairs, extending from the midpoint of the sides around the perimeter of the base, would be approximately 105.191326092 miles.



[Figure XXI]

$$d = \sqrt{(-689.488 - -763.87)^2 + (0 - -74.381)^2}$$

Conclusion

The Bible explicitly provides dimensions of a city in the form of a perfect cube. However, it does not provide an explanation for how tall or wide its entrance and exit gates will be. It neither describes how spread apart each of the the three North, South, East, and West gates will be. The Bible also does not mention if the gates will be accessible via ramps, staircases, or ladders. One can only speculate. This data analysis does not, nor does it intend to, either disprove or prove the Bible. Rather, it graphs the unprecedented dimensions of what the Bible describes to be heaven.