

Mathematics and The New Jerusalem

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Abstract

*"The holy city, the new Jerusalem, coming down out of heaven from God, prepared as a bride adorned for her husband. . . ."*¹ is a prophecy from the Book of Revelation. When I was a very young woman with no education beyond high school, I discovered something so incredible contained within the scripture describing this city. I felt like an archeologist who had just discovered a fine alabaster jar still intact and fragrant. Inside this piece of scripture, cleverly and artfully woven into the vision was the exact circumference of the planet earth. I turned to the book of Genesis. There too, encoded into the Creation and Noah's Ark myths were the mathematics of ancient prophets and storytellers who had never circumnavigated the globe, revealing the exact circumference of our home—the planet Earth. This knowledge fills me with the desire to go and tell that God is with us and has promised to sing and rejoice with us as parents do when a loving couple gets married.

My presentation looks at the mathematics encoded in the Bible with the faith that the ancient people had in God who creates them. The myths and prophecies encoded in the Bible have the power to unite scientists, theologians, mathematicians, musicians, storytellers and artisans all over the world...to go and tell the World, our Creator has faith in us. We are destined to create a New Jerusalem where God's Love sustains us, our home and creation.

Keywords: The New Jerusalem, God's Promise, Creation, Mathematics, Faith

1. Introduction

"The holy city, the new Jerusalem, coming down out of heaven... prepared as a bride adorned for her husband. . . ." is a prophecy from the Book of Revelation (Rev. 21:2).

As a homemaker and a very young woman with no education beyond high school, I discovered something so incredible contained within this prophecy. I felt like an archaeologist who had just discovered a fine alabaster jar still intact with a fragrant

¹ Revelation 21: 2 NRSV.

love note inside. Within this sacred piece of writing, so poetically nuanced was the body measurements of humanity and the earth.

I turned to the book of Genesis. I heard the Spirit of God hovering over the water and God saying, "Let there be light and there was light...separating the light from the darkness...and calling the light day and the darkness night...and there was evening, and there was morning—that first day." When I got to the end of the chapter and read how God made humanity in God's own image and likeness on the sixth day and told humanity to be fruitful and multiply, suddenly out of nowhere as I turned to the beginning of the next chapter—there it was—Heaven and Earth resting within a framework of seven mornings and seven evenings—8400 hours of daylight and 8400 hours of darkness [Genesis 1 - 2:1].

2. Vancouver 1983

Then I used my imagination and I saw how storytellers wove mathematics into this Creation story and the Noah's Ark story. With each new discovery, it became obvious to me. Our foremothers and forefathers centuries before the Christian era knew the exact circumference of our home—the planet earth.

This discovery thrilled me and when I approached a local Protestant minister with my excitement, he very bluntly told me he could not share my excitement. He advised me to go to the Sixth Assembly of the World Council of Churches and meet up with the Greeks.

This was Vancouver 1983. I had never even met a Greek let alone seen a Greek Orthodox icon or a Russian one such as this one of Zephaniah.



Figure 1: Zephaniah 3:17

I have since learned that Zephaniah was a Hebrew prophet. Zephaniah predicted that one day the old city of Jerusalem would die. It would cease to be a place of worship and God would create a New Jerusalem, with great rejoicing. In Zephaniah 3:17 the

prophet declares "On that day they will say to Jerusalem 'Do not fear, Zion; do not let your hands hang limp. The Lord your God is with you, the Mighty Warrior who saves. He will take great delight in you; in his love he will no longer rebuke you, but will rejoice over you with singing.'

2.1 Icons

Before I go any further, I need to tell you that my presentation is a faith-based revelation that comes out of my own personal observations, experiences and knowledge of the Bible. Before I show you the mathematics, I will present some icons to show what I have learned through observation. I begin with the icon of Zephaniah.

Notice the prophet's encircled head and his red outer garment and how the aquamarine inner garment billows and forms a jug. As icons do, this one is giving the viewer a window into the Divine [Lazareth (1983)]. Notice too, how the prophet Zephaniah resembles an African male. Furthermore, because his outer garment is scarlet, I am thinking the iconographer is demonstrating a life principle. Children have a father and a mother. From the very beginning it was the spirit who hovered over her life giving water and when she brought forth life and poured out herself and all that had been created within herself... her husband, her Lord, named and declared all that she brought forth...good [Genesis 1: 1-31].

What Zephaniah is wearing is important. As is what he is holding. He is holding the written word like Moses holds up a tablet of the Law and as Esther holds the Megillah, the scroll recounting how she saved her people. The red dress Zephaniah is wearing is symbolic of life and the egg shape enveloping his body reinforces the female image as the womb of life. Therefore, this icon says to me that our Mother gives us life and our Father protects her and their offspring.



Figure 2: Crazy Dog T Shirts Women's Mathletes Math Teacher Funny T Shirt (Amazon.ca)

In this modern advertising icon, you will notice that the female figure is wearing a red shirt displaying two familiar math symbols . . . pi and the division sign. Notice how the division sign resembles a Nike swoosh. These symbols and this picture tell me that mathematics give women the creative edge, no matter what they do.

When I was a girl, I learned how to use math in home economics. I could sew and make my own clothes and read patterns. If a meter stick was not handy, I could figure out how much cloth I was buying by holding the cloth up to my nose and stretching out my arm. I could pace off a room and place furniture or make drapes accordingly to the measure of my steps. In addition, to square off my fabric, I would go down to my father's work bench and find his L shaped square and square it up with the salvage edge to straighten out the frayed cut edge—so I could fold the cloth and find the bias. Finding the bias was important, especially if one wanted to cut out a billowy sleeve or a circular skirt.

2.2 *The Mathematics of the Holy City*

I could also use a ruler well. So when I read in the book of Revelation how the prophet describes the Holy City as laying four square and measuring 12,000 stadia with a partition of 144 cubits according to the measure of an angel, the first thing I did was pick up a ruler. Then I laid it down on a piece of paper and drew a 12-inch line diagonally across the page. Next, I drew a square and put a circle in the square because I had a hunch that the Holy City was going to be a global village.

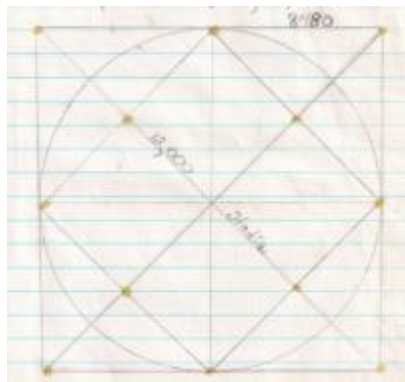


Figure 3: Holy City—Four Square Measuring 12,000 Stadia

By doing this, I discovered that the diameter of the circle within the square with the diagonal measure of 12 inches was 8.48 inches. From there it was easy to substitute 12,000 stadia for the diagonal measure of the square. My father's forty-year-old household Funk and Wagnall dictionary defined stadia as merely a large

measurement.² Therefore, I went with that and calculated that a circle within a square with a diagonal measure of 12,000 would have a slightly smaller measure of 8400 for its diameter.

This got me thinking. The Revised Standard Version of the Bible that I had at home stated that the Holy City in the Book of Revelation "lies foursquare, its length the same as its breadth; and he measured the city with his rod, twelve thousand stadia, its length and breadth and height are equal" [Rev. 21:16]. He also measured its wall, a hundred and forty-four cubits by a man's measure, that is, an angel's.

Upon further reflection, I could easily see how the person's limbs were the measuring rod. As I said earlier. My dictionary gave me the measurement of a "stadia," defining it as simply an ancient Greco-Roman term meaning a great measure as in stadium. So I looked up the word "cubit" in my dictionary and found that a cubit was the measure of a person's forearm measuring 18 – 22 inches.³ As a homemaker, I thought of a wall or partition as a divider. So I divided the 144 cubit measurement of the wall by 18 inches, the small cubit measure and then a larger one. These measurements seemed insignificant. So I converted the inches to centimeters and divided the 144 wall measurement with 45.72 centimeters, the metric measure of the 18 inch smaller cubit. I got 3.149. This measurement was significant. I recognized it from elementary school. Pi was 3.1416 or roughly speaking 3.14 or 3.149.

Therefore, I then multiplied 3.14 by 8400 the diameter of the circle within the square. This result was 26,376 stadia. Thinking I needed to convert this measurement into something Greco-Roman, I chose a Roman man's pace because it was a human body measurement.

My dictionary said a Roman man's pace measured 1.5 meters, so I went with that. Multiplying 26,376 by 1.5 meters, I got 39,564. Rounded up to the nearest 1,000, the circle within the square measured 40,000 meters. I multiplied that figure by 1,000 and I got the actual circumference of our planet, which is approximately 40,000 kilometers. Then why, multiply by 1,000?

I had two reasons. One because a Roman mile is a thousand paces. Secondly because as the psalmist sings in Psalm 90:1-4, God is our dwelling place, our resting place, and for God a thousand years is like a day gone by. Therefore, it made sense to me to think of one meter as equalling a thousand.

² The Concise Oxford Dictionary, ninth edition (1995) defines *Stadia* as a course for a foot race or chariot race, a measure of length, about 185 meters (about 7200 inches).

³ See also http://worldwideflood.com/ark/noahs_cubit/cubit_references.htm

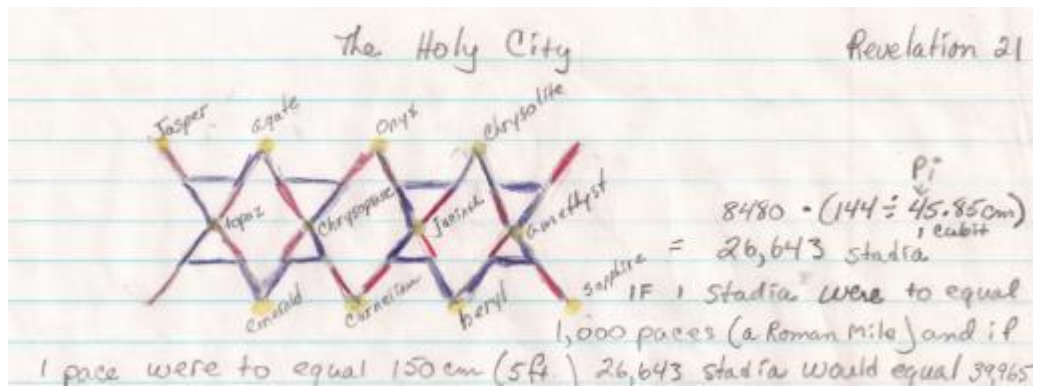


Figure 4: The Holy City Jewelled Gate Pattern

According to the Book of Revelation, the foundations of the wall of the city are adorned with every jewel; the first is jasper, the second sapphire, the third agate, the fourth emerald, the fifth onyx, the sixth carnelian, the seventh chrysolite, the eighth beryl, the ninth topaz, the tenth chrysoptase, the eleventh jacinth, the twelfth amethyst. In addition, the twelve gates are twelve pearls, each of the gates is made of a single pearl, and the street of the city is pure gold, transparent as glass [Rev. 21: 19-21].

Therefore, I plainly saw that the New Jerusalem is not a city located in the Middle East. Rather the New Jerusalem is a global city richly dressed like a bride for her husband. The Book of Revelation states that the city has twelve gates. On each gate, there is a jewel. In this drawing that I made in figure 4 there are three closed diamond shaped squares and two open ended half diamond shaped squares. The top open ended square unites with the jasper and the bottom one with the sapphire gate to encircle the New Jerusalem.



Figure 5: The Star of David and Noah's Ark

Reviewing my original drawing, I noticed how the space in between the gates forms the six-sided shape of the Star of David (figure 5). Therefore, this triggered my imagination and I began to imagine the Noah's Ark story found in Genesis 6 as another story that might contain the mathematics of our planet (figure 6).



Figure 6: The Pentagram and Noah's Ark

In Genesis 6:15, Noah's Ark was to measure 300 cubits, its breadth 50 cubits, and its height 30 cubits. Ignoring the 2 words breadth and height, I simply added 50 cubits and 30 cubits to the 300, the largest measure given. That being 380, I then multiplied that number by the larger 20 inch cubit which gave me 7600 inches. Keeping this 7600 measure in mind, I then drew a hexagram and a pentagram with the line stretching across its breadth and the line stretching across its height measuring 7600 inches.

I drew the stars by first drawing the Ark with a triangular hull and set it on top of a triangular mountain peak for the pentagram and between two peaks for the hexagram. Then I joined the top of the ark to the mountain or mountains by the triangle shape created by an olive twig.

Because the story concludes with God setting a rainbow in the clouds [Genesis 9:13], I drew a rainbow circling around the Ark. Next, I drew a square around the circular rainbow. Using my ruler, I could see that the square had a diagonal measure of 12, and the diameter of the circle and square framing the circle was going to be 8.4.

The interesting discovery here was that using the measurements of the Ark found in the story, creatively, I got a measurement closer to the actual circumference of the Earth.

Taking 300 cubits, the length of the Ark and multiplying it by the breadth and height $50 + 30$ squared, I got 1,920,000 cubits. Then to convert to inches, I multiplied by 20.86 inches (the inch measure of a larger cubit). Thus, I concluded that this Ark

measured 40,051 inches or 40,051 Kilometers if one applies the scale of 1 inch = 1,000 meters.

2.3 The New Jerusalem as a Love Letter

With the idea of Noah's Ark story in mind as a charter for the environment, sealed with God's rainbow promise, I took a piece of paper 8.5 by 11 and folded it, squaring it. I tore off the excess and then I folded it in on itself four times. Next, I folded that in half and flipped out one of the corners. This gave me what looked like an envelope children make for their valentines.



Figure 7



Figure 8

I did this for two reasons. Firstly, I wanted to vindicate Zacheus the Gospel tax collector found in Luke 19 who said, "If I have cheated anyone I'll pay them back fourfold and give half my wealth to the poor."

I also wanted to vindicate the person of the following parable of Luke 19: 20-26 who folded a coin up in a napkin and did nothing with it because she was afraid that if she put it in the bank, a very taxing master would take it from her and rule over her and her children. Somewhere deep within my heart I felt that the dominant political party had judged Zacheus and the person of the napkin parable of Luke's Gospel as sinners and wicked servants to exploit people for political gain. My heart, told me vindication

of Zacheus and the person of the napkin would reveal God's plan for the New Jerusalem and bring freedom and justice to the world [Micah 4: 8, Luke 7:35].

To vindicate people beginning with Zacheus and the person with the napkin who produced zero interest for her master [Luke 19: 20-26], I needed to prove my calculations with a logical mathematical proof.

So I folded a ruled piece of paper the way I had before, squaring it and then folding it four times and then in half. I unfolded it, drew a large zero in it by tracing a plate, and then marked dots where the lines intersected and marked them gold to represent the 12 pearls of the Gate structure encircling the Holy City with the 12 jewels mentioned earlier. Notice how the folds create triangles and squares (figure 9).



Figure 9

In High School, I learned that the Ancient Greek philosopher and mathematician Pythagoras had used a well-developed formula for calculating triangles and the sides of a square if one knew the diagonal measurement.

The Pythagorean Theorem proves that the sum of the squares of the two sides (legs) equals the square of the diagonal. So knowing that the diagonal is 12,000 I tested my ruler measurement with this ancient formula

$$X^2 + X^2 = D^2$$

$$D = 12,000$$

$$\text{So } X^2 + X^2 = D^2 = 144,000,000$$

$$\text{Therefore } 2X^2 = 144,000,000$$

Then Divide both sides by 2:

$$X^2 = 72,000,000$$

$$\sqrt{X^2} = \sqrt{72,000,000}$$

$$X = \sqrt{72,000,000} = 8485 \text{ rounded down to } 8480$$

Wanting to be more precise, I divided again the 144 cubits, the measure of the wall, with the small cubit numbered 45.72 centimeters. The result was 3.149. I then multiplied it with the 8485 figure I got with the Pythagorean Theorem, and I got 26,719. To convert to meters, I multiplied 26,719 centimeters by 1.5 meters, a person's pace. The result was 40,078 meters. I then multiplied this result again by 1,000 meters. These calculations indicated that the circumference of the global village of Zion imagined so long ago by people of faith would be 40,078 kilometers. Google tells me that the actual circumference of the planet is approximately 40,075 kilometers.⁴

Thinking about the sinful tax collector and the wicked servant who wrapped her coin in a napkin, I looked carefully at the folds. I had the formula and so when I drew a smaller circle inside the inner square, I could see that the smaller circle had a diagonal measure the same as the side measure of the outer square. Therefore, the smaller circle had a diameter of nearly 600. Now remembering that Noah was 600 years old when God flooded the earth [Genesis 7:6], I had another hunch that this 600 figure was going to give me a slightly smaller figure for the Earth's measurement. In fact, it did. $600 \times 3.149 \times 21.175 \text{ inches} = 40,008 \text{ inches}$ or 40,008 Kilometers if 1 inch = 1 kilometer.

2.4 God's Plan, Revealed with Sacred Geometry

Why should you care whether our ancestors could calculate the circumference of the planet? For me, doing so was as if I had unearthed a revealing time capsule or the sought after Ark of the Covenant and the Pearly Gates.

What makes this time capsule so special is that it tells me that God does have a plan and we can count on God to sustain us. God has given us this plan for the New Jerusalem and embedded it in sacred texts to save it until humanity and the world are mature enough to realize the plan and live in love. We are to love our world and protect her and redeem her and value her as a priceless jewel. We are to link our arms together and protect her as if we are the pearly gates.

We are to love her as a divine husband would. We are to listen to her voice, read and preserve her love notes, and cherish and know her body inside out as if her body were our very own. She is a very richly endowed woman. Should we demand that she sell her dowry and her fragrant perfume and all that she possesses and give the money to the poor we will have a bad marriage and we will be unable to sustain right relationships with our neighbours. As Paul says in the love letter written to the Corinthians, "if I give all my possessions to feed the poor, and if I surrender my body to be burned, but do not have love, it profits me nothing" [1 Corinthians 13:3].

⁴ <http://www.universetoday.com/26461/circumference-of-the-earth/>.

As a groom, we need to think of our bride as her own person with her own jar, her own storehouse of riches that she manages and entrusts to us, because she loves us and trusts us to be her faithful Adon,⁵ her lord, her loving husband and steward.

In closing, take a moment to reflect upon what it means to be a faithful steward and spouse as we reflect upon this song entitled *The Gate* composed by DonStewart. DonStewart is a singer and songwriter who participated in Ecothee 13.

2.5 *The Gate*

The Gate from Don Stewart's soon to be released *Let Me Be Good* album is a song that expresses a longing for a love that will never end. Each verse builds on it.

Take a walk to the Gate
Dance with me a while
Remember when we were just a child
Come and Dance and Sing
Let the love begin
A love that will never end

The door will open
And I may not be ready
But when I dance
I will remember
The way I lived and know
It was joyous
Maybe not always
But I did live and love
And here you are with me

At the Gate
I'd like to wait
But I'll be late
So here I go
Will you dance for me
At the Gate
And over there, I'll wait
Take your time, I'll wait
On the other side of the Gate

At the Gate
I'd like to wait
But I'll be late

⁵ <http://biblehub.com/hebrew/113.htm>

So here I go
Will you dance for me

At the Gate
And over there, I'll wait
Take your time, I'll wait
On the other side of the Gate (repeat 1 more time)

Take your time, I'll wait
Love you so
Gonna miss you so
Here I go
Don't cry for me
I'll miss you so
I'll miss you so

2.6 Concluding Thoughts

As a Christian, I trust God's promise to Creation. I am a woman of faith. Mathematics and my desire to see the Holy City as the world sparked my imagination and blessed my faith a hundred fold. I will dwell in the house of my Lord, my God and your God, forever. I trust in God's promises and I believe that God has created humanity and has given humanity the promise that God will dwell among us forever whether the world embraces God's wisdom or not. Such is God's love for the world. The challenge facing many people today is great. The climate and global politics are changing. Politicians and people all over the world point the finger of blame at each other and have lost faith in God and each other. God's children are to love one another as God loves, with faith in the world. However, as long as people live divided against one another, vilifying the other calling each other liars, cheats, gluttons, sinners, racists and evil terrorists, God's love and wisdom remains buried—mere lines and dots imprinted on linen cloth. In doing so, people cheat themselves out of the joyous moments God's love brings to those waiting at the Gate, who have found God's love.

3. References

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