

**Earth/matriX**  
SCIENCE TODAY

**The Sun|Earth|Moon Relation:  
Polar/Mean/Equatorial Diameters and Circumferences**

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*A Commentary*

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When astronomers say that the Sun is 400 times larger than the Earth's Moon and that the Sun is 109 times bigger than the Earth, essentially they are referencing, respectively, the Earth's fractal circumference of 40075 kilometers and the Moon's fractal circumference of 10921.0 kilometers. However, these relationships have never been referenced as such in the astronomy science literature, as far as I have been able to tell. In this essay, these and similar relationships of symmetry and equivalency are examined with regard to the different measurements of diameter and circumference of the Earth's moon, the Earth and the Sun.

Recently, I published on my [www.earthmatrix.com](http://www.earthmatrix.com) web-site a brief comment about the Sun|Earth|Moon relationship. This essay is an extension of that commentary.

Measured numerical values for the diameters and circumferences of the Moon|Earth|Sun vary according to whether one selects their *polar*, *mean* or *equatorial* aspects. Innumerable variations occur and are possible to be drawn, but the general relations of

proportion remain. At the end of this essay, a list of theoretically possible relationships among these different aspects is presented with a few selected examples.

Aside from the differences produced by numerical values for the polar|mean|equatorial aspects, further, variations in the numerical values occur depending upon the different sources for the data provided. In this study, I selectively use different *polar|mean|equatorial* numerical values in order to demonstrate specific relations of different cases. The forms of matter-energy of spacetime/motion are in constant flux, therefore the relationships selected in this study are not carved in stone, but rather themselves are in constant movement. The readers are encouraged to derive their own measurements and relationships with the numerical values of their choosing. The list of theoretically possible relationships of the polar|mean|equatorial diameters and circumferences offers a starting point for deriving such numerical values and ratios.

In this study, I have selectively chosen varying polar|mean|equatorial numerical values because the polar|mean|equatorial spacetime events themselves are varying in their own material relationships to one another at all times. Therefore, I am not looking for, nor am I suggesting, that the cited symmetries and equivalencies presented here are definite, fixed relations. Emphasis: no such fixed relationships exist either in theory or in reality. In summary, I am demonstrating through the numbers how possibly the Moon, the Earth and the Sun relate to one another in theorized relationships of symmetry and equivalency.

The relationships selected for analysis presented in this study deny the many theories of interpretation based on the random or chaotic behavior of matter-energy in spacetime.

A single example may be sufficient to demonstrate such equivalencies:

**Sun Mean Diameter | Earth Mean Diameter | Moon Equatorial Circumference**

Sun's Mean Diameter *divided by* Earth's Mean Diameter *equals* Moon's Equatorial Circumference

$$1,391,684 / 12,742.0 = 10922.0$$

Many theories in today's sciences are based upon the concept of randomness and happenstance. For example, the theory of the continents drifting on the surface of the Earth represents one such interpretation. If scientists view every material relation that exists as the product of happenstance, as in another example, the random collision of particles in physics, the essential behavior of matter|energy may be misrepresented or even misconstrued.

The relationships of the forms of matter-energy in spacetime/motion may appear to be random but they are not due to happenstance. The spacetime/motion coordinates of every matter-energy event may be demonstrated theoretically and acted upon physically. That's scientific knowledge. In this study, we examine some of the symmetries and relations of equivalencies regarding the measured diameters and circumferences of the Sun|Earth|Moon.

For my analysis, I have selected some commonly cited values for the diameters/circumferences of the Moon, the Earth and the Sun in our solar system. Some of the diameter|circumference numerical values I have computed as of  $\pi$  [3.141592654]. Often, in the science literature only one value will be provided (either that of the diameter or, that of the circumference). In those cases, the use of  $\pi$  derives the corresponding value. Generally, however, the sources in the literature only offer values cited without any reference to their possible relationships as presented in this study. And, remember most of the values vary in the science literature.

The following list represents some of the values in kilometers found in and derived from those in the science literature of today. *[The numerical values do not appear in sequential or progressive numerical order but as cited per their classification in the literature or, as derived in this study. Suggestion, do not attempt to make any sense out of the following numerical values listed, as they come from different sources and have been independently derived with no particular logic or relationship amongst them. Some of the values on the previous list appear to be sequentially out of order, but they are listed as cited for their classification in the literature.]*

Many alternate numerical values appear in the science literature. One may consider that a specific numerical values should exist for each category, for the polar|mean|equatorial distances for the diameters and circumferences of the Sun, the Earth and the Earth's moon.

**Moon's Diameters:** **Moon's Circumferences:**  
*[in kilometers]*

<b>Polar:</b> 3472	<b>Polar:</b> 10907.6
<b>Mean:</b> 3474	<b>Mean:</b> 10913.8
<b>Equatorial:</b> 3476	<b>Equatorial:</b> 10916

**Earth's Diameters:** **Earth's Circumferences:**

<b>Polar:</b> 12713	<b>Polar:</b> 40008
<b>Mean:</b> 12742	<b>Mean:</b> 40030.2
<b>Equatorial:</b> 12756	<b>Equatorial:</b> 40075

Sun's Diameters:

**Polar:** 1389990  
**Mean:** 1389995  
**Equatorial:** 1,390000

Sun's Circumferences:

**Polar:** 4,366,782.4  
**Mean:** 4,366,797.7  
**Equatorial:** 4366813

The Sun is nearly a perfect sphere by scientists' measurements, said to differ between its polar and equatorial circumferences by only 10 kilometers. The common equatorial diameter and the polar diameter of the Sun have a difference of about 10 kilometers. With the circumference of the Sun cited in the science literature as a seemingly exact number, 4,366,813, the other numbers are derived theoretically (but erroneously) as of pi. The popular search engines on the Internet today propose 1,391,684 kilometers for the Sun's diameter and often 4,379,000 for its circumference. How these two values may be related is unknown to me. Neither of these two popular values can be related even closely as of pi. True, *pi* derives as of a perfect sphere, the sun is said to be a nearly perfect sphere. But, these two numerical values are worlds apart.

$$1391684 \times \pi = 4372104.231 \qquad 4366813 / \pi = 1389999.749$$
$$1391684 - 1389999.749 = 1648.25098$$

They are 168 times the difference of 10 kilometers.

Since the Moon, the Earth and the Sun are not perfect spheres, the use of pi must be employed sparingly, with reservations. In summary, none of the numerical values are cast in stone, so take them for their value in terms of relationships in constant motion. The use of *pi* in computations for an oblate spheroid is for approximation only. In the final analysis, one cannot take the diameter of the Earth [an oblate spheroid] and compute its circumference with pi. Its' circumference is irregular, not a perfect sphere to begin with. Likewise, one cannot take the circumference of an oblate spheroid and compute its diameter with pi.

Further, astronomers frequently show the following ratios:

The Sun's diameter divided by the **Earth's mean diameter:**  
 $1393684 / 12742 = \underline{109.377}$  [ergo, the Earth is 109 times smaller than the Sun]

The Sun's diameter divided by the **diameter of the Moon:**  
 $1393684 / 3476 = \underline{400.94}$  [ergo, the Moon is 400 times smaller than the Sun]

The commonly cited phrases by astronomers appear often: that *the Sun is 400 times bigger than the Earth's Moon* and, that *the Sun is 109 times bigger than the Earth*.

Such affirmations may be made and appear to be substantiated by the numerical values. But, what do those numbers actually represent? I am afraid that for a long time, astronomers have missed the point regarding the cited numbers. Those derivations represent part of the cosmic story. But, actually the numbers are referencing, respectively, the Earth's fractal circumference **40075** and the Moon's **10921** fractal circumference ---in inverse order.

Astronomers use the 400-times number to draw attention to the size of the Moon. And, they use the 109-times number to draw attention to the Earth. But, actually, those numerical values have greater significance when considered inversely.

In other words, *the 400x number is used to refer to the size of the Moon to the Sun*. However, *it is a fractal expression of the Earth's mean circumference: 40075 kilometers*.

The *109x number is used to refer to the size of the Earth to the Sun*. However, *it is a fractal expression of the Moon's equatorial circumference: 10921 kilometers*.

These related measurements do not derive from some cosmic accident.

Instead of comparing mere size of the objects under consideration, one may consider the relationships of those bodies. The previous size comparisons are analyzed here distinctly as shall be illustrated below. If the *ratios* are conceptualized as *relationships* among the different types of measurement (mean, polar, equatorial diameters and circumferences), then a unique relationship exists among the Moon|Earth|Sun in our solar system. *The relationship is far more significant than merely pointing out the relative sizes of the Earth and its moon to the size of the Sun in our solar system*.

Here is a fractal numerical fact. Observe the halving of the circumference of the Sun:

$$4366813 / 2 = 2183406.5, \mathbf{1091703.25}.$$

Stop. Consider this fact in relation to the Moon's equatorial circumference: **10916**.

Now, consider the numerical values on the previous list and situate the derivations illustrated above. Observe the placement of the often cited numbers the Moon 400 times smaller than the Sun and the Earth as 109 times smaller than the Sun. Then, think in terms of significant fractal numerical values as in scientific notation. The relationships should appear obvious now.

**Moon's Diameters:** **Moon's Circumferences:**  
*[in kilometers]*

<b>Polar:</b> 3472	<b>Polar:</b> <u>10907.6</u>
<b>Mean:</b> 3474	<b>Mean:</b> <u>10913.8</u>
<b>Equatorial:</b> 3476	<b>Equatorial:</b> <u>10916</u>

**Earth's Diameters:** **Earth's Circumferences:**

<b>Polar:</b> 12713	<b>Polar:</b> <u>40008</u>
<b>Mean:</b> 12742	<b>Mean:</b> <u>40030.2</u>
<b>Equatorial:</b> 12756	<b>Equatorial:</b> <u>40075</u>

**Sun's Diameters:** **Sun's Circumferences:**

<b>Polar:</b> 1389990	<b>Polar:</b> 4,366,782.4
<b>Mean:</b> 1389995	<b>Mean:</b> 4,366,797.7
<b>Equatorial:</b> 1,390000	<b>Equatorial:</b> 4366813

Even though the astronomers have called attention to the relationships regarding the size of the three cited bodies [Sun|Earth|Moon], it would appear that they have not explored these facts further. The question arises as to why three different celestial bodies, a star, a water-soaked earth and a barren moon, three different kinds of spacetime/motion events share the same unit of measurement regarding their diameters and circumferences in nearly whole numbers? The fractal numbers of the Sun and the Earth's moon are nearly exactly the same.

Sun's radius given: 694999.749 halves to 347499.8745 fractal

Moon's mean diameter: 3474 doubles closely to 6948 fractal

Variations apply according to the measurements selected in the science literature. The variations, however, generally reflect the general tendencies of these three bodies sharing fractal multiples with one another.

Examine some of the variations that may be found in today's science literature together with some of the numerical values derived from this study. Keep them in mind as we examine the possible relations among the Sun, the Earth and the Earth's moon in this essay.

And one last general observation. This study treats three celestial bodies, one of which we happen to live on. A chart of the possible relations of the Sun|Earth|Moon is presented at the end of this study. It is entitled, *The Earth/matrix Chart of The Sun|Earth|Moon Relations in Terms of their Polar|Mean|Equatorial Diameters and Circumferences* No doubt, a **chart** could encompass all of the planets and their moons in our solar system. However, producing a chart that might explore the interrelationships of the Sun to all of its planets and their moons in our solar system is a task in the study of multi-gravitational relations may exceed the capability of theoretical analysis at his time.

The imprecise world of scientific measurements is suggested by the following numerical values. The following values are either found in today's science literature or derive from their logical expressions as of geometry presented in this study.

<u><b><i>Moon's Diameters:</i></b></u>	<u><b><i>Moon's Circumferences:</i></b></u>
<i>[in kilometers]</i>	
<b>Polar:</b> 3472	<b>Polar:</b> 10907.6
<b>Mean:</b> 3474; 3474.2; 3474.2; 3474.8; 3475	<b>Mean:</b> 10913.8
<b>Equatorial:</b> 3476; 3476.28	<b>Equatorial:</b> 10916; 10921

<u><b><i>Earth's Diameters:</i></b></u>	<u><b><i>Earth's Circumferences:</i></b></u>
<b>Polar:</b> 12713; 12713.6; 12714; 12715.43	<b>Polar:</b> 39942.2; 40008
<b>Mean:</b> 12735; 12742; 12748	<b>Mean:</b> 40030; 40030.2
<b>Equatorial:</b> 12756; 12756.2;	<b>Equatorial:</b> 40074.2; 40075

<u><b><i>Sun's Diameters:</i></b></u>	<u><b><i>Sun's Circumferences:</i></b></u>
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**Polar:** 1389990; 1389995.61; 1391684;  
1391374.6; 1392000; 1393089.8;  
1393684

**Mean:** 1389995; 1389997.68; 1390968.4;  
1391000; 1391016; 1393878.9

**Equatorial:** 1389999.749; 1390000;  
1391000; 1391684; 1392000

**Polar:** 4366781.373; 4366803

**Mean:** 4366798.08; 436967480; 4369955.4;  
4372104.2; 4374041.2; 4376044.7;  
4376590.7; 4376600; 4379000

**Equatorial:** 4366813

The question regarding the exact measurement of the diameters and circumferences of the Sun, the Earth and the Earth's moon apparently remains to be resolved. In the meantime, we shall experiment with the measurements given in today's science literature. For in spite of all the variation in numerical values, definite relationships exist that require theoretical speculation and analysis. The analysis concerns how the given numbers behave. The speculation would ponder why the numbers behave as they do. Speculation shall be saved for another time.

### *An Analysis*

Remember, the numerical values vary in a selective manner. It is suggested that you derive your own computations with the particular numerical values that you deem necessary. These variations may depend upon source of data, type of data, polar, mean/average or, equatorial measurements, and the like. In spite of the varied relations of numerical values the equivalencies will remain as we shall now show. In the following relationships, I have arbitrarily selected different numerical values from the previous list simply to illustrate possible derivations. An infinite number are possible; the following examples represent a minimum amount of possibilities.

The following relationships will be presented in the order of *Sun|Earth|Moon* and then within those levels, the order will be *polar|mean|equatorial* and *diameter|circumference* in those sequential orders. [See the list at the end of this essay for a selective classification of these terms.]

Many of the relationships illustrated below among the Sun|Earth|Moon do not appear in today's literature of Classical Astronomy. The relationships of numerical values presented here represent fractal expressions in many cases, without reference to the actual decimal place shown or derived from the computations. The point is to compare the significant numerical values of a given computation, as in scientific notation [without the decimal placement]. Imagine a fractal numerical expression to be a figure of significant numbers in scientific notation without the decimal place being given.

In a sense, this is what the astronomers are doing when they point out that the Moon is 400 times smaller than the Sun, and the Earth is 109 times smaller than the Sun. The 400 and 109 numerical expressions are the *respective fractal values* of the corresponding Earth's equatorial circumference [40075] and the Moon's equatorial circumference [10921]. They simply have not treated fully what those numerical values represent in terms of the relationships of the Moon|Earth|Sun in our solar system. They have emphasized the fractal size of the moon/planet/sun instead of their relational linkage. Herein we point out certain relational aspects among the different measurements for the Sun|Earth|Moon corresponding to their diameters and circumferences. A few examples are offered as repetition sets in with regard to the numerical values. A more complete picture would include computing all of the relationships as on the chart. However, the purpose of presenting all of the possible relationships among the three selected bodies is not readily perceived.

**Selected Relationships among the Diameters/Circumferences of the Moon|Earth|Sun in our solar system.**

**Mathematical Relationships in the First Procedure between the Sun | Earth Relation:**

**Sun Polar Diameter | Earth Mean Diameter | Moon Polar Circumference**

*Sun's Polar Diameter divided by Earth's Mean Diameter equals Moon's Polar Circumference*  
1389996.6 / 12742 = 10908.7

**Sun Polar Diameter | Earth Mean Circumference | Moon Equatorial Diameter**

*Sun's Polar Diameter divided by Earth's Mean Circumference equals Moon's Equatorial Diameter*  
1391684 / 40030.2 = 3,476.5

**Sun Polar Diameter | Earth Equatorial Diameter | Moon Polar Circumference**

*Sun's Polar Diameter divided by Earth's Equatorial Diameter equals Moon's Polar Circumference*  
1392000 / 12756.0 = 10,912

**Sun Polar Diameter | Earth Equatorial Circumference | Moon Polar Diameter**

*Sun's Polar Diameter divided by Earth's Equatorial Circumference equals Moon's Polar Diameter*  
1391684 / 40075 = **3,472.6**

**Sun Mean Diameter | Earth Mean Diameter | Moon Equatorial Circumference**

$$\text{Sun's Mean Diameter divided by Earth's Mean Diameter} = \text{Moon's Equatorial Circumference} \\ 1391684 / 12,742.0 = 10922.0$$

**Sun Mean Circumference | Earth Mean Circumference | Moon Polar Circumference**

$$\text{Sun Equatorial Circumference divided by Earth Mean Circumference equals Moon Polar Circumference} \\ 436,995,540 / 40030 = 10916.7 \\ 436,681,300 / \underline{400}30 = \underline{109}08.8$$

Remember the fact that astronomers cite the Sun as being **400 times** bigger than the Moon and **109 times** bigger than the Earth. Here is where those two fractal values lie. Many other examples follow.

**Sun Mean Circumference | Earth Mean Circumference | Moon Equatorial Circumference**

$$\text{Sun Equatorial Circumference divided by Earth Mean Circumference equals Moon Equatorial Circumference} \\ 437,660,000 / \underline{400}30 = \underline{109}33.3$$

**Sun Mean Circumference | Earth Equatorial Circumference | Moon Equatorial Circumference**

$$\text{Sun's Mean Circumference divided by Earth's Equatorial Circumference equals Moon's Equatorial Circumference} \\ 437,659,075 / 40075 = 10921 \\ 437,660,000 / \underline{400}75 = \underline{109}21.02$$

**Sun Equatorial Circumference | Earth Polar Circumference | Moon Polar Circumference**

$$\text{Sun's Equatorial Circumference divided by Earth's Polar Circumference equals Moon's Polar Circumference} \\ 4366813 \text{ divided by } \underline{400}08 \text{ equals } \underline{109}14.8$$

Division First Procedure

Sun / Moon

**Sun Mean Diameter | Moon Polar Diameter | Earth Equatorial Circumference**

$$\text{Sun's Mean Diameter divided by Moon's Polar Diameter equals Earth's Equatorial Circumference} \\ 1391684 / \underline{347}2.6 = 40,075$$

**Sun Mean Diameter | Moon Mean Diameter | Earth Equatorial Circumference**

*Sun's Mean Diameter divided by Moon's Mean Diameter equals Earth's Equatorial Circumference*  
 $1391684 / 3474.8 = 40,075$

**Sun Mean Diameter | Moon Equatorial Diameter | Earth Mean Circumference**

*Sun's Mean Diameter divided by Moon's Equatorial Diameter equals Earth's Mean Circumference*  
 $1391684 / 3476.5 = 40,030.2$

**Sun Mean Diameter | Moon Equatorial Circumference | Earth Mean Diameter**

*Sun's Mean Diameter divided by Moon's Equatorial Circumference equals Earth's Mean Diameter*  
 $1391684 / 10922.0 = 12,742.0$

**Sun Mean Diameter | Moon Equatorial Circumference | Earth Equatorial Diameter**

*Sun's Mean Diameter divided by Moon's Equatorial Circumference equals Earth's Equatorial Diameter*  
 $1392000 / 10912 = 12,756.5$

**Sun Mean Circumference | Moon Equatorial Circumference | Earth Mean Circumference**

*Sun's Mean Circumference divided by Moon's Equatorial Circumference equals Earth's Mean Circumference*  
 $436,681,300 / 10921 = 39,985.5$

**Sun Mean Circumference | Moon Equatorial Circumference | Earth Equatorial Circumference**

*Sun's Mean Circumference divided by Moon's Equatorial Circumference equals Earth's Equatorial Circumference*  
 $436995540 / 10921 = 40014.2$   
 $437,660,000 / \underline{10921} = \underline{40075}$   
 $437,659,075 / 10921 = 40075$   
 $437,604,470 = \underline{40070} \times \underline{10921}$

**Multiplication First Procedure**

**Earth | Moon**

**Earth Mean Circumference | Moon Equatorial Circumference | Sun Mean Circumference**

*Earth's Mean Circumference times Moon's Equatorial Circumference equals Sun's Mean Circumference*  
 $\underline{40075} \times \underline{10921} = 437,659,075.0$

**Earth Equatorial Circumference | Moon Equatorial Circumference | Sun Mean Circumference**

*Earth's Equatorial Circumference times Moon's Equatorial Circumference equals Sun's Mean Circumference*  
 $\underline{40075} \times \underline{10921} = 437,659,075.0$

**Moon / Earth Relation**

**Moon Polar Circumference | Earth's Equatorial Circumference | Sun Mean Circumference**

*Moon's Polar Circumference times Earth's Equatorial Circumference equals Sun's Mean Circumference*  
 $\underline{10916} \times \underline{40070} = 437,404,120$

**Moon Polar Circumference | Earth's Mean Circumference | Sun Mean Circumference**

*Moon's Polar Circumference times Earth's Mean Circumference equals Sun's Mean Circumference*  
 $\underline{10916} \times \underline{40030} = 436,967,480$

**Moon Equatorial Circumference | Earth Equatorial Circumference | Sun Mean Circumference**

*Moon's Equatorial Circumference times Earth's Equatorial Circumference equals Sun's Mean Circumference*  
 $\underline{10921} \times \underline{40070} = 437,604,470$

Variations in the numerical values are offered as examples of the dynamic nature of spacetime/motion in matter-energy events. Motion derived as of spacetime produces variations in the relations of the forms of matter-energy in constant flux. All three values do not always correspond because in the science literature generally only one or two values are provided, unrelated to their implied third value.

For example, 12756 and 3472 values are listed in the current astronomy literature, but not the 1391374.69 implied value as of the mediation of pi. The 40075 and 10921 values are also provided in the literature, but not the 437659075.0 value.

Variations on the procedure abound and may be presented from distinct perspectives. Consider the following possibility.

**Earth Mean diameter | Moon Equatorial diameter | Sun Equatorial diameter**

*Earth mean diameter times Moon equatorial diameter equals Sun equatorial diameter*

$$[12742 \times \pi] \text{ times } [3474.8 \times \pi] \text{ equals } [139091068 \times \pi]$$

$$[\text{diameter} \times \pi] \text{ times } [\text{diameter} \times \pi] \text{ equals } [\text{diameter} \times \pi]$$

$$40030.17 \text{ times } 10916.4 \text{ equals } 436967477.4 \text{ fractal}$$

$$\text{equals}$$

**Earth Mean circumference | Moon Equatorial circumference | Sun ca. Equatorial circumference**

*And so on, infinitely so...*

***Sun / Earth / Moon & pi***

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The following procedure includes the additional aspect of *pi*.

**Sun's Polar Diameter | Earth's Mean Diameter | Moon's Mean Diameter | pi**

*Sun's Polar Diameter equals Earth's Mean Diameter times Moon's Mean Diameter times pi*

$$1,390,968.472 = 12742 \times 3474.8 \times 3.141592654$$

**Solar Polar Diameter | Earth Equatorial Diameter | Moon Polar Diameter | pi**

*Sun's Polar Diameter equals Earth's Equatorial Diameter times Moon's Polar Diameter times pi*

$$1,391,374.69 = 12,756 \times 3,472 \times 3.141592654$$

**Sun Mean Diameter | Earth Equatorial Diameter | Moon Equatorial Diameter | pi**

*Sun's Mean Diameter = Earth's Equatorial Diameter times Moon's Equatorial Diameter times pi*

$$1,393,089.8 \text{ fractal} = 12756 \times 3476.28 \times 3.141592654$$

**Sun Mean Diameter | Moon Equatorial Diameter | Earth Equatorial Diameter | pi |**

*Sun's Mean Diameter = Moon's Equatorial Diameter times Earth's Equatorial Diameter times pi*

$$1,393,089.8 \text{ fractal} = 3476.28 \times 12756 \times 3.141592654$$

**Sun Mean Circumference | Earth Mean Circumference | Moon Polar Circumference | pi | Moon's Mean Diameter**

*Sun's Mean Circumference divided by Earth's Mean Circumference equals Moon's Polar Circumference divided by pi equals Moon's Mean Diameter*

$$4,369,955.4 / 40030.2 = 10916.6 / \pi = 3,474.8$$

$$4,372,104.231 / 40030.2 = 10922.0 / \pi = 3,476.5$$

**Sun Mean Circumference | Earth Mean Circumference | Moon Polar Circumference | pi | Moon's Equatorial Diameter**

*Sun's Mean Circumference divided by Earth's Mean Circumference equals Moon's Polar Circumference divided by pi equals Moon's Equatorial Diameter*

$$4,366,813 / 40030.2 = 10908.8 / \pi = 3,472.4$$

$$4,366,813 \text{ divided by } \underline{400}30.2 \text{ equals } \underline{109}08.8 \text{ divided by } \underline{\pi} \text{ equals } 3,472.4$$

**Sun Mean Circumference | Earth Mean Circumference | Moon Polar Circumference | pi | Moon's Mean Diameter**

*Sun's Mean Circumference divided by Earth's Mean Circumference equals Moon's Polar Circumference divided by pi equals Moon's Mean Diameter*

$$4,369,955.4 \text{ divided by } \underline{400}30.2 \text{ equals } \underline{109}16.6 \text{ divided by } \underline{\pi} \text{ equals } 3,474.8$$

$$4,372,104.231 \text{ divided by } \underline{400}30.2 \text{ equals } \underline{109}22.0 \text{ divided by } \underline{\pi} \text{ equals } 3,476.5$$

**Sun Mean Circumference | Earth Mean Circumference | Moon Equatorial Circumference | pi | Moon's Equatorial Diameter**

*Sun's Mean Circumference divided by Earth's Mean Circumference equals Moon's Equatorial Circumference divided by pi equals Moon's Equatorial Diameter*

$$4,376,590 / 40030.2 = 10933.22 / \pi = 3480.1$$

$$4,376,590 \text{ divided by } \underline{400}30.2 \text{ equals } \underline{109}33.22 \text{ divided by } \underline{\pi} \text{ equals } 3480.1$$

$$4,379,000 / 40030.2 = 10939.2 / \pi = 3482.0$$

$$4,379,000 \text{ divided by } \underline{400}30.2 \text{ equals } \underline{109}39.2 \text{ divided by } \underline{\pi} \text{ equals } 3482.0$$

**Earth's Mean Diameter | Moon's Mean Diameter | pi | Sun's Polar Diameter**

*Earth's Mean Diameter times Moon's Mean Diameter times pi equals Sun's Polar Diameter*

$$12742 \times 3474.8 \times 3.141592654 = 1,390,968.472$$

**Earth's Equatorial Diameter | Moon's Polar Diameter | pi | Sun's Polar Diameter**

*Earth's Equatorial Diameter times Moon's Polar Diameter times pi equals Sun's Polar Diameter*

$$12,756 \times 3,472 \times 3.141592654 = 1,391,374.69$$

**Moon Equatorial Diameter | Earth Equatorial Diameter | pi | Sun Mean Diameter**

*Moon's Equatorial Diameter times Earth's Equatorial Diameter times pi equals Sun's Mean Diameter*

$$3476.28 \times 12756 \times 3.141592654 = 1,393,089.8 \text{ fractal}$$

### *An Additional Commentary*

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In this essay select relationships have been presented regarding the symmetries and equivalencies among the Sun | Earth | Moon. For a more complete picture of the required parameters of such an analysis, consider the following chart placed at the end of this essay. The nature of the chart is explosive in the sense that once the mathematical procedures and symbols [division and multiplication] between the various categories, the amount of measured relationships would be innumerable, as they exist in reality. The following chart is not exhaustive. It only marks the initial possible relationships. A complete, exhaustive chart may, in fact, be impossible to produce once the distinctively numerous sources of measurement are introduced on the chart.

In various examples on the following chart, certain numerical values have been selected at random in order to illustrate how the numbers of a particular relationship behave. In some examples, instead one value being selected, numerous variations in the numerical values are selected for comparative purposes. Given the fact that there is no single numerical value agreed upon by all astronomers for a particular category, on the chart, there is no correct or incorrect answer to a given relationship. Even when one is referencing a specific polar|mean|equatorial diameter and/or circumference of the three bodies many variations exist. The relationships on the chart are merely theoretically possible ones.

However, in reality, in spacetime/motion, any given theoretical relationship among these three bodies exists as of specific numerical values. Scientists are simply unable to measure a particular relationship in strict numerical terms. In other words, take any category on the chart. We know that the polar diameter of the moon relates to the polar diameter of the Earth and both relate to the polar diameter of the Sun. It is next to impossible to measure, however, that in reality and translate it into specific experimental numbers.

Reality exists as of all of the theoretically stated relationships on the following chart, *and then some*. One may understand that all of the relationships stated on the chart exist at any given moment during the existence of the three bodies cited. Placing a number upon one of them is next to impossible; deriving all of the numerical values for all of the relationships listed on the chart is simple not possible. Now, for a moment, as you go over the stated relationships on the chart, imagine a chart that would include all of the other planets and moons in our solar system in relation to one another as stated in this chart. It would be impossible even to write out such a set of relationships, must less begin thinking about their infinitely so derivations. Nevertheless, that is how the solar system exists in spacetime/motion with the Sun and all of its planets and all of their moons in relation to one another as of their polar|mean|equatorial diameters and circumferences.

In a later essay, I shall present a few of the numerical values that correspond to relationships of other planetary and lunar bodies in our solar system with respect to the three bodies considered in this study. An initial commentary has already been posted on the [www.earthmatrix.com](http://www.earthmatrix.com) web-site. Someone may suggest that a computer program could handle an analysis of multiple planetary bodies and their moons. That may be the case, but it is not on the horizon. In the meantime, we must be content to consider one star, one planet and one moon; our Sun, our Earth and our Moon.

*The Earth/matrix Chart*

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**The Sun|Earth|Moon Relations in Terms of their Polar|Mean|Equatorial Diameters and Circumferences**

*A Few Selected Data Entries as Examples in Fractal Numbers*

Charles William Johnson

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*Sun / Earth*

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*Diameter / Diameter*

Sun Polar Diameter	Earth Polar Diameter	
Sun Polar Diameter	Earth Mean Diameter	
Sun Polar Diameter	Earth Equatorial Diameter	

Sun Mean Diameter	Earth Polar Diameter	
Sun Mean Diameter	Earth Mean Diameter:	$1391684 / 12742 = 109 \text{ times [Earth 109 times smaller than the Sun]}$
Sun Mean Diameter	Earth Equatorial Diameter	

Sun Equatorial Diameter	Earth Polar Diameter	
Sun Equatorial Diameter	Earth Mean Diameter	
Sun Equatorial Diameter	Earth Equatorial Diameter:	$1391684 / 12756 = 109.10 \text{ [Earth 109.10 times smaller than the Sun]}$

*Diameter / Circumference*

Sun Polar Diameter	Earth Polar Circumference:	$1389990 / 40008 = 3474.28 \text{ [Moon Mean diameter]}$
Sun Polar Diameter	Earth Mean Circumference:	$1389990 / 40030.2 = 3472.35 \text{ [Moon Polar diameter]}$

Sun Polar Diameter | Earth Equatorial Circumference

Sun Mean Diameter | Earth Polar Circumference

Sun Mean Diameter | Earth Mean Circumference:  $1389995 / 40030.2 = 3472.36$  [Moon Polar diameter]

Sun Mean Diameter | Earth Equatorial Circumference

Sun Equatorial Diameter | Earth Polar Circumference:  $1391000 / 40008 = 3476.8$  [Moon Equatorial diameter]

Sun Equatorial Diameter | Earth Mean Circumference

Sun Equatorial Diameter | Earth Equatorial Circumference

### **Circumference / Diameter**

Sun Polar Circumference | Earth Polar Diameter:  $4366787 / 12713 = 343.489 \times \pi = 1079.10$  [ca. Moon]

Sun Polar Circumference | Earth Mean Diameter

Sun Polar Circumference | Earth Equatorial Diameter

Sun Mean Circumference | Earth Polar Diameter

Sun Mean Circumference | Earth Mean Diameter

Sun Mean Circumference | Earth Equatorial Diameter

Sun Equatorial Circumference | Earth Polar Diameter

Sun Equatorial Circumference | Earth Mean Diameter

Sun Equatorial Circumference | Earth Equatorial Diameter

### **Circumference / Circumference**

Sun Polar Circumference | Earth Polar Circumference:  $4366787 / 40008 = 109.14$  [ca. Moon]

Sun Polar Circumference | Earth Mean Circumference

Sun Polar Circumference | Earth Equatorial Circumference

Sun Mean Circumference | Earth Polar Circumference

Sun Mean Circumference | Earth Mean Circumference

Sun Mean Circumference | Earth Equatorial Circumference

Sun Equatorial Circumference | Earth Polar Circumference

Sun Equatorial Circumference | Earth Mean Circumference

Sun Equatorial Circumference | Earth Equatorial Circumference:  $4366813 / 40075 = 108.96$  [ca. Moon]

## **Sun Moon**

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**Diameter / Diameter**

Sun Polar Diameter	Moon Polar Diameter:	1389990 / 3472 = 400.34 [Earth Mean circumference]
Sun Polar Diameter	Moon Mean Diameter	
Sun Polar Diameter	Moon Equatorial Diameter	
Sun Mean Diameter	Moon Polar Diameter	
Sun Mean Diameter	Moon Mean Diameter:	1391684 / 3476 = <u>400</u> [Moon 400 times smaller than the Sun]
Sun Mean Diameter	Moon Equatorial Diameter	
Sun Equatorial Diameter	Moon Polar Diameter	
Sun Equatorial Diameter	Moon Mean Diameter	
Sun Equatorial Diameter	Moon Equatorial Diameter	1391684 / 3476 = 400.36 [Earth Mean circumference]

**Diameter / Circumference**

Sun Polar Diameter	Moon Polar Circumference
Sun Polar Diameter	Moon Mean Circumference
Sun Polar Diameter	Moon Equatorial Circumference
Sun Mean Diameter	Moon Polar Circumference
Sun Mean Diameter	Moon Mean Circumference
Sun Mean Diameter	Moon Equatorial Circumference
Sun Equatorial Diameter	Moon Polar Circumference
Sun Equatorial Diameter	Moon Mean Circumference
Sun Equatorial Diameter	Moon Equatorial Circumference

**Circumference / Diameter**

Sun Polar Circumference	Moon Polar Diameter
Sun Polar Circumference	Moon Mean Diameter
Sun Polar Circumference	Moon Equatorial Diameter
Sun Mean Circumference	Moon Polar Diameter
Sun Mean Circumference	Moon Mean Diameter
Sun Mean Circumference	Moon Equatorial Diameter
Sun Equatorial Circumference	Moon Polar Diameter
Sun Equatorial Circumference	Moon Mean Diameter

Sun Equatorial Circumference | Moon Equatorial Diameter

**Circumference / Circumference**

Sun Polar Circumference | Moon Polar Circumference  
Sun Polar Circumference | Moon Mean Circumference  
Sun Polar Circumference | Moon Equatorial Circumference

Sun Mean Circumference | Moon Polar Circumference  
Sun Mean Circumference | Moon Mean Circumference  
Sun Mean Circumference | Moon Equatorial Circumference

Sun Equatorial Circumference | Moon Polar Circumference  
Sun Equatorial Circumference | Moon Mean Circumference  
Sun Equatorial Circumference | Moon Equatorial Circumference

**Diameter / Diameter**

Earth Polar Diameter | Moon Polar Diameter  
Earth Polar Diameter | Moon Mean Diameter  
Earth Polar Diameter | Moon Equatorial Diameter

Earth Mean Diameter | Moon Polar Diameter  
Earth Mean Diameter | Moon Mean Diameter  
Earth Mean Diameter | Moon Equatorial Diameter

Earth Equatorial Diameter | Moon Polar Diameter  
Earth Equatorial Diameter | Moon Mean Diameter  
Earth Equatorial Diameter | Moon Equatorial Diameter

**Diameter / Circumference**

Earth Polar Diameter | Moon Polar Circumference  
Earth Polar Diameter | Moon Mean Circumference  
Earth Polar Diameter | Moon Equatorial Circumference

Earth Mean Diameter | Moon Polar Circumference  
Earth Mean Diameter | Moon Mean Circumference  
Earth Mean Diameter | Moon Equatorial Circumference

**Earth / Moon**

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Earth Equatorial Diameter | Moon Polar Circumference  
Earth Equatorial Diameter | Moon Mean Circumference  
Earth Equatorial Diameter | Moon Equatorial Circumference

**Circumference / Diameter**

Earth Polar Circumference | Moon Polar Diameter  
Earth Polar Circumference | Moon Mean Diameter  
Earth Polar Circumference | Moon Equatorial Diameter

Earth Mean Circumference | Moon Polar Diameter  
Earth Mean Circumference | Moon Mean Diameter  
Earth Mean Circumference | Moon Equatorial Diameter

Earth Equatorial Circumference | Moon Polar Diameter  
Earth Equatorial Circumference | Moon Mean Diameter  
Earth Equatorial Circumference | Moon Equatorial Diameter

**Circumference / Circumference**

Earth Polar Circumference | Moon Polar Circumference  
Earth Polar Circumference | Moon Mean Circumference  
Earth Polar Circumference | Moon Equatorial Circumference

Earth Mean Circumference | Moon Polar Circumference  
Earth Mean Circumference | Moon Mean Circumference  
Earth Mean Circumference | Moon Equatorial Circumference

Earth Equatorial Circumference | Moon Polar Circumference  
Earth Equatorial Circumference | Moon Mean Circumference  
Earth Equatorial Circumference | Moon Equatorial Circumference

**Sun / Earth / Moon**

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**Diameter / Diameter / Diameter**

Sun Polar Diameter | Earth Polar Diameter | Moon Polar Diameter  
Sun Polar Diameter | Earth Polar Diameter | Moon Mean Diameter  
Sun Polar Diameter | Earth Polar Diameter | Moon Equatorial Diameter

Solar Polar Diameter	Earth Mean Diameter	Moon Polar Diameter
Solar Polar Diameter	Earth Mean Diameter	Moon Mean Diameter
	<i>Sun's Polar Diameter equals Earth's Mean Diameter times Moon's Mean Diameter times pi: 1,390,968.472 = 12742 x 3474.8 x 3.141592654</i>	
Solar Polar Diameter	Earth Mean Diameter	Moon Equatorial Diameter
	<i>Sun's Polar Diameter divided by Earth's Mean Diameter equals Moon's Equatorial Circumference: 1391684 / 12742 = 10,922</i>	
Solar Polar Diameter	Earth Equatorial Diameter	Moon Polar Diameter
	<i>Sun's Polar Diameter divided by Earth's Equatorial Diameter equals Moon's Polar Circumference: 1392000 / 12756.0 = 10,912</i>	
Solar Polar Diameter	Earth Equatorial Diameter	Moon Mean Diameter
Solar Polar Diameter	Earth Equatorial Diameter	Moon Equatorial Diameter
Sun Mean Diameter	Earth Polar Diameter	Moon Polar Diameter
Sun Mean Diameter	Earth Polar Diameter	Moon Mean Diameter
Sun Mean Diameter	Earth Polar Diameter	Moon Equatorial Diameter
Sun Mean Diameter	Earth Mean Diameter	Moon Polar Diameter
Sun Mean Diameter	Earth Mean Diameter	Moon Mean Diameter
Sun Mean Diameter	Earth Mean Diameter	Moon Equatorial Diameter
Sun Mean Diameter	Earth Equatorial Diameter	Moon Polar Diameter
Sun Mean Diameter	Earth Equatorial Diameter	Moon Mean Diameter
Sun Mean Diameter	Earth Equatorial Diameter	Moon Equatorial Diameter
	<i>Sun's Mean Diameter = Moon's Equatorial Diameter times Earth's Equatorial Diameter times pi: 1,393,089.8 fractal = 3476.28 x 12756 x 3.141592654</i>	
Sun Equatorial Diameter	Earth Polar Diameter	Moon Polar Diameter
Sun Equatorial Diameter	Earth Polar Diameter	Moon Mean Diameter
Sun Equatorial Diameter	Earth Polar Diameter	Moon Equatorial Diameter
Sun Equatorial Diameter	Earth Mean Diameter	Moon Polar Diameter
Sun Equatorial Diameter	Earth Mean Diameter	Moon Mean Diameter
Sun Equatorial Diameter	Earth Mean Diameter	Moon Equatorial Diameter
Sun Equatorial Diameter	Earth Equatorial Diameter	Moon Polar Diameter
Sun Equatorial Diameter	Earth Equatorial Diameter	Moon Mean Diameter
Sun Equatorial Diameter	Earth Equatorial Diameter	Moon Equatorial Diameter

**Diameter / Circumference / Diameter**

Sun Polar Diameter	Earth Polar Circumference	Moon Polar Diameter
Sun Polar Diameter	Earth Polar Circumference	Moon Mean Diameter
Sun Polar Diameter	Earth Polar Circumference	Moon Equatorial Diameter

Sun Polar Diameter	Earth Mean Circumference	Moon Polar Diameter
Sun Polar Diameter	Earth Mean Circumference	Moon Mean Diameter
Sun Polar Diameter	Earth Mean Circumference	Moon Equatorial Diameter

*Sun's Polar Diameter divided by Earth's Mean Circumference equals Moon's Equatorial Diameter: 1391684 / 40030.2 = 3,476.5*

Sun Polar Diameter	Earth Equatorial Circumference	Moon Polar Diameter
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*Sun's Polar Diameter divided by Earth's Equatorial Circumference equals Moon's Polar Diameter: 1391684 / 40075 = 3,472.6*

Sun Polar Diameter	Earth Equatorial Circumference	Moon Mean Diameter
Sun Polar Diameter	Earth Equatorial Circumference	Moon Equatorial Diameter

Sun Mean Diameter	Earth Polar Circumference	Moon Polar Diameter
Sun Mean Diameter	Earth Polar Circumference	Moon Mean Diameter
Sun Mean Diameter	Earth Polar Circumference	Moon Equatorial Diameter

Sun Mean Diameter	Earth Mean Circumference	Moon Polar Diameter
Sun Mean Diameter	Earth Mean Circumference	Moon Mean Diameter
Sun Mean Diameter	Earth Mean Circumference	Moon Equatorial Diameter

*Sun's Mean Diameter divided by Earth's Mean Circumference equals Moon's Equatorial Diameter: 1391684 / 40,030 = 3476.6*

Sun Mean Diameter	Earth Equatorial Circumference	Moon Polar Diameter
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*Sun's Mean Diameter divided by Earth's Equatorial Circumference equals Moon's Polar Diameter: 1391684 / 40,075 = 3472.6*

Sun Mean Diameter	Earth Equatorial Circumference	Moon Mean Diameter
Sun Mean Diameter	Earth Equatorial Circumference	Moon Equatorial Diameter

Sun Equatorial Diameter	Earth Polar Circumference	Moon Polar Diameter
Sun Equatorial Diameter	Earth Polar Circumference	Moon Mean Diameter
Sun Equatorial Diameter	Earth Polar Circumference	Moon Equatorial Diameter

Sun Equatorial Diameter	Earth Mean Circumference	Moon Polar Diameter
Sun Equatorial Diameter	Earth Mean Circumference	Moon Mean Diameter
Sun Equatorial Diameter	Earth Mean Circumference	Moon Equatorial Diameter

Sun Equatorial Diameter	Earth Equatorial Circumference	Moon Polar Diameter
Sun Equatorial Diameter	Earth Equatorial Circumference	Moon Mean Diameter
Sun Equatorial Diameter	Earth Equatorial Circumference	Moon Equatorial Diameter

**Circumference / Diameter / Diameter**

Sun Polar Circumference	Earth Polar Diameter	Moon Polar Diameter
Sun Polar Circumference	Earth Polar Diameter	Moon Mean Diameter

Sun Polar Circumference	Earth Polar Diameter	Moon Equatorial Diameter
Sun Polar Circumference	Earth Mean Diameter	Moon Polar Diameter
Sun Polar Circumference	Earth Mean Diameter	Moon Mean Diameter
Sun Polar Circumference	Earth Mean Diameter	Moon Equatorial Diameter
Sun Polar Circumference	Earth Equatorial Diameter	Moon Polar Diameter
Sun Polar Circumference	Earth Equatorial Diameter	Moon Mean Diameter
Sun Polar Circumference	Earth Equatorial Diameter	Moon Equatorial Diameter
Sun Mean Circumference	Earth Polar Diameter	Moon Polar Diameter
Sun Mean Circumference	Earth Polar Diameter	Moon Mean Diameter
Sun Mean Circumference	Earth Polar Diameter	Moon Equatorial Diameter
Sun Mean Circumference	Earth Mean Diameter	Moon Polar Diameter
Sun Mean Circumference	Earth Mean Diameter	Moon Mean Diameter
Sun Mean Circumference	Earth Mean Diameter	Moon Equatorial Diameter
Sun Mean Circumference	Earth Equatorial Diameter	Moon Polar Diameter
Sun Mean Circumference	Earth Equatorial Diameter	Moon Mean Diameter
Sun Mean Circumference	Earth Equatorial Diameter	Moon Equatorial Diameter
Sun Equatorial Circumference	Earth Polar Diameter	Moon Polar Diameter
Sun Equatorial Circumference	Earth Polar Diameter	Moon Mean Diameter
Sun Equatorial Circumference	Earth Polar Diameter	Moon Equatorial Diameter
Sun Equatorial Circumference	Earth Mean Diameter	Moon Polar Diameter
Sun Equatorial Circumference	Earth Mean Diameter	Moon Mean Diameter
Sun Equatorial Circumference	Earth Mean Diameter	Moon Equatorial Diameter
Sun Equatorial Circumference	Earth Equatorial Diameter	Moon Polar Diameter
Sun Equatorial Circumference	Earth Equatorial Diameter	Moon Mean Diameter
Sun Equatorial Circumference	Earth Equatorial Diameter	Moon Equatorial Diameter

**Circumference / Circumference / Diameter**

Sun Polar Circumference	Earth Polar Circumference	Moon Polar Diameter
Sun Polar Circumference	Earth Polar Circumference	Moon Mean Diameter
Sun Polar Circumference	Earth Polar Circumference	Moon Equatorial Diameter

Sun Polar Circumference	Earth Mean Circumference	Moon Polar Diameter
Sun Polar Circumference	Earth Mean Circumference	Moon Mean Diameter
Sun Polar Circumference	Earth Mean Circumference	Moon Equatorial Diameter

Sun Polar Circumference	Earth Equatorial Circumference	Moon Polar Diameter
Sun Polar Circumference	Earth Equatorial Circumference	Moon Mean Diameter
Sun Polar Circumference	Earth Equatorial Circumference	Moon Equatorial Diameter

Sun Mean Circumference	Earth Polar Circumference	Moon Polar Diameter
Sun Mean Circumference	Earth Polar Circumference	Moon Mean Diameter
Sun Mean Circumference	Earth Polar Circumference	Moon Equatorial Diameter

Sun Mean Circumference	Earth Mean Circumference	Moon Polar Diameter
Sun Mean Circumference	Earth Mean Circumference	Moon Mean Diameter
Sun Mean Circumference	Earth Mean Circumference	Moon Equatorial Diameter

Sun Mean Circumference	Earth Equatorial Circumference	Moon Polar Diameter
Sun Mean Circumference	Earth Equatorial Circumference	Moon Mean Diameter
Sun Mean Circumference	Earth Equatorial Circumference	Moon Equatorial Diameter

Sun Equatorial Circumference	Earth Polar Circumference	Moon Polar Diameter
Sun Equatorial Circumference	Earth Polar Circumference	Moon Mean Diameter
Sun Equatorial Circumference	Earth Polar Circumference	Moon Equatorial Diameter

Sun Equatorial Circumference	Earth Mean Circumference	Moon Polar Diameter
Sun Equatorial Circumference	Earth Mean Circumference	Moon Mean Diameter
Sun Equatorial Circumference	Earth Mean Circumference	Moon Equatorial Diameter

Sun Equatorial Circumference	Earth Equatorial Circumference	Moon Polar Diameter
Sun Equatorial Circumference	Earth Equatorial Circumference	Moon Mean Diameter
Sun Equatorial	Earth Equatorial Circumference	Moon Equatorial Diameter

**Diameter / Diameter / Circumference**

Sun Polar Diameter	Earth Polar Diameter	Moon Polar Circumference
Sun Polar Diameter	Earth Polar Diameter	Moon Mean Circumference
Sun Polar Diameter	Earth Polar Diameter	Moon Equatorial Circumference

Sun Polar Diameter	Earth Mean Diameter	Moon Polar Circumference
Sun Polar Diameter	Earth Mean Diameter	Moon Mean Circumference

Sun Polar Diameter | Earth Mean Diameter | Moon Equatorial Circumference  
*Sun's Polar Diameter divided by Earth's Mean Diameter equals Moon's Equatorial Circumference: 1391684 / 12742 = 10,922*

Sun Polar Diameter | Earth Equatorial Diameter | Moon Polar Circumference  
*Sun's Polar Diameter divided by Earth's Equatorial Diameter equals Moon's Polar Circumference: 1392000 / 12756.0 = 10,912*

Sun Polar Diameter | Earth Equatorial Diameter | Moon Mean Circumference  
 Sun Polar Diameter | Earth Equatorial Diameter | Moon Equatorial Circumference

Sun Mean Diameter | Earth Polar Diameter | Moon Polar Circumference  
 Sun Mean Diameter | Earth Polar Diameter | Moon Mean Circumference  
 Sun Mean Diameter | Earth Polar Diameter | Moon Equatorial Circumference

Sun Mean Diameter | Earth Mean Diameter | Moon Polar Circumference  
 Sun Mean Diameter | Earth Mean Diameter | Moon Mean Circumference  
 Sun Mean Diameter | Earth Mean Diameter | Moon Equatorial Circumference  
*Sun's Mean Diameter divided by Earth's Mean Diameter equals Moon's Equatorial Circumference: 1391684 / 12,742.0 = 10922.0*

Sun Mean Diameter | Earth Equatorial Diameter | Moon Polar Circumference  
 Sun Mean Diameter | Earth Equatorial Diameter | Moon Mean Circumference  
 Sun Mean Diameter | Earth Equatorial Diameter | Moon Equatorial Circumference  
*Sun's Mean Diameter divided by Earth's Equatorial Diameter equals Moon's Equatorial Circumference: 1392000 / 12,756.5 = 10912*

Sun Equatorial Diameter | Earth Polar Diameter | Moon Polar Circumference  
 Sun Equatorial Diameter | Earth Polar Diameter | Moon Mean Circumference  
 Sun Equatorial Diameter | Earth Polar Diameter | Moon Equatorial Circumference

Sun Equatorial Diameter | Earth Mean Diameter | Moon Polar Circumference  
 Sun Equatorial Diameter | Earth Mean Diameter | Moon Mean Circumference  
 Sun Equatorial Diameter | Earth Mean Diameter | Moon Equatorial Diameter

Sun Equatorial Diameter | Earth Equatorial Diameter | Moon Polar Circumference  
 Sun Equatorial Diameter | Earth Equatorial Diameter | Moon Mean Circumference  
 Sun Equatorial Diameter | Earth Equatorial Diameter | Moon Equatorial Circumference

**Diameter / Circumference / Circumference**

Sun Polar Diameter | Earth Polar Circumference | Moon Polar Circumference  
 Sun Polar Diameter | Earth Polar Circumference | Moon Mean Circumference  
 Sun Polar Diameter | Earth Polar Circumference | Moon Equatorial Circumference

Sun Polar Diameter | Earth Mean Circumference | Moon Polar Circumference

Sun Polar Diameter	Earth Mean Circumference	Moon Mean Circumference
Sun Polar Diameter	Earth Mean Circumference	Moon Equatorial Circumference
Sun Polar Diameter	Earth Equatorial Circumference	Moon Polar Circumference
Sun Polar Diameter	Earth Equatorial Circumference	Moon Mean Circumference
Sun Polar Diameter	Earth Equatorial Circumference	Moon Equatorial Circumference
Sun Mean Diameter	Earth Polar Circumference	Moon Polar Circumference
Sun Mean Diameter	Earth Polar Circumference	Moon Mean Circumference
Sun Mean Diameter	Earth Polar Circumference	Moon Equatorial Circumference
Sun Mean Diameter	Earth Mean Circumference	Moon Polar Circumference
Sun Mean Diameter	Earth Mean Circumference	Moon Mean Circumference
Sun Mean Diameter	Earth Mean Circumference	Moon Equatorial Circumference
Sun Mean Diameter	Earth Equatorial Circumference	Moon Polar Circumference
Sun Mean Diameter	Earth Equatorial Circumference	Moon Mean Circumference
Sun Mean Diameter	Earth Equatorial Circumference	Moon Equatorial Circumference
Sun Equatorial Diameter	Earth Polar Circumference	Moon Polar Circumference
Sun Equatorial Diameter	Earth Polar Circumference	Moon Mean Circumference
Sun Equatorial Diameter	Earth Polar Circumference	Moon Equatorial Circumference
Sun Equatorial Diameter	Earth Mean Circumference	Moon Polar Circumference
Sun Equatorial Diameter	Earth Mean Circumference	Moon Mean Circumference
Sun Equatorial Diameter	Earth Mean Circumference	Moon Equatorial Circumference
Sun Equatorial Diameter	Earth Equatorial Circumference	Moon Polar Circumference
Sun Equatorial Diameter	Earth Equatorial Circumference	Moon Mean Circumference
Sun Equatorial Diameter	Earth Equatorial Circumference	Moon Equatorial Circumference

**Circumference / Diameter / Circumference**

Sun Polar Circumference	Earth Polar Diameter	Moon Polar Circumference
Sun Polar Circumference	Earth Polar Diameter	Moon Mean Circumference
Sun Polar Circumference	Earth Polar Diameter	Moon Equatorial Circumference
Sun Polar Circumference	Earth Mean Diameter	Moon Polar Circumference
Sun Polar Circumference	Earth Mean Diameter	Moon Mean Circumference
Sun Polar Circumference	Earth Mean Diameter	Moon Equatorial Circumference

Sun Polar Circumference	Earth Equatorial Diameter	Moon Polar Circumference
Sun Polar Circumference	Earth Equatorial Diameter	Moon Mean Circumference
Sun Polar Circumference	Earth Equatorial Diameter	Moon Equatorial Circumference
Sun Mean Circumference	Earth Polar Diameter	Moon Polar Circumference
Sun Mean Circumference	Earth Polar Diameter	Moon Mean Circumference
Sun Mean Circumference	Earth Polar Diameter	Moon Equatorial Circumference
Sun Mean Circumference	Earth Mean Diameter	Moon Polar Circumference
Sun Mean Circumference	Earth Mean Diameter	Moon Mean Circumference
Sun Mean Circumference	Earth Mean Diameter	Moon Equatorial Circumference
Sun Mean Circumference	Earth Equatorial Diameter	Moon Polar Circumference
Sun Mean Circumference	Earth Equatorial Diameter	Moon Mean Circumference
Sun Mean Circumference	Earth Equatorial Diameter	Moon Equatorial Circumference
Sun Equatorial Circumference	Earth Polar Diameter	Moon Polar Circumference
Sun Equatorial Circumference	Earth Polar Diameter	Moon Mean Circumference
Sun Equatorial Circumference	Earth Polar Diameter	Moon Equatorial Circumference
Sun Equatorial Circumference	Earth Mean Diameter	Moon Polar Circumference
Sun Equatorial Circumference	Earth Mean Diameter	Moon Mean Circumference
Sun Equatorial Circumference	Earth Mean Diameter	Moon Equatorial Circumference
Sun Equatorial Circumference	Earth Equatorial Diameter	Moon Polar Circumference
Sun Equatorial Circumference	Earth Equatorial Diameter	Moon Mean Circumference
Sun Equatorial Circumference	Earth Equatorial Diameter	Moon Equatorial Circumference

**Circumference / Circumference /Circumference**

Sun Polar Circumference	Earth Polar Circumference	Moon Polar Circumference
Sun Polar Circumference	Earth Polar Circumference	Moon Mean Circumference
Sun Polar Circumference	Earth Polar Circumference	Moon Equatorial Circumference
Sun Polar Circumference	Earth Mean Circumference	Moon Polar Circumference
Sun Polar Circumference	Earth Mean Circumference	Moon Mean Circumference
Sun Polar Circumference	Earth Mean Circumference	Moon Equatorial Circumference
Sun Polar Circumference	Earth Equatorial Circumference	Moon Polar Circumference

Sun Polar Circumference	Earth Equatorial Circumference	Moon Mean Circumference
Sun Polar Circumference	Earth Equatorial Circumference	Moon Equatorial Circumference
Sun Mean Circumference	Earth Polar Circumference	Moon Polar Circumference
Sun Mean Circumference	Earth Polar Circumference	Moon Mean Circumference
Sun Mean Circumference	Earth Polar Circumference	Moon Equatorial Circumference
Sun Mean Circumference	Earth Mean Circumference	Moon Polar Circumference
	<i>Sun Equatorial Circumference divided by Earth Mean Circumference equals Moon Polar Circumference: 436,995,540 / 40030 = 10916.7; 436,681,300 / 40030 = 10908.8</i>	
Sun Mean Circumference	Earth Mean Circumference	Moon Mean Circumference
Sun Mean Circumference	Earth Mean Circumference	Moon Equatorial Circumference
	<i>Sun Equatorial Circumference divided by Earth Mean Circumference equals Moon Equatorial Circumference: 437,660,000 / 40030 = 10933.3</i>	
Sun Mean Circumference	Earth Equatorial Circumference	Moon Polar Circumference
	<i>Sun's Mean Circumference equals Earth's Equatorial Circumference times Moon's Equatorial Circumference: 437,659,075.0 = 40075 x 10921; 437,604,470 = 40070 x 10921</i>	
Sun Mean Circumference	Earth Equatorial Circumference	Moon Mean Circumference
	<i>Sun's Mean Circumference divided by Earth's Equatorial Circumference equals Moon's Mean Circumference: 436,681,300 / 39,985.5 = 10921; 436995540 / 40008 = 10922</i>	
Sun Mean Circumference	Earth Equatorial Circumference	Moon Equatorial Circumference
	<i>Sun's Mean Circumference divided by Earth's Equatorial Circumference equals Moon's Equatorial Circumference: 436995540 / 40014.2 = 10921; 437,660,000 / 40075 = 10921</i>	
Sun Equatorial Circumference	Earth Polar Circumference	Moon Polar Circumference
	<i>Sun's Equatorial Circumference divided by Earth's Polar Circumference equals Moon's Polar Circumference: 4366813 divided by 40008 equals 10914.8</i>	
Sun Equatorial Circumference	Earth Polar Circumference	Moon Mean Circumference
Sun Equatorial Circumference	Earth Polar Circumference	Moon Equatorial Circumference
Sun Equatorial Circumference	Earth Mean Circumference	Moon Polar Circumference
	<i>Sun Equatorial Circumference divided by Earth Mean Circumference equals Moon Polar Circumference: 436,995,540 / 40030 = 10916.7; 436,681,300 / 40030 = 10908.8</i>	
Sun Equatorial Circumference	Earth Mean Circumference	Moon Mean Circumference
Sun Equatorial Circumference	Earth Mean Circumference	Moon Equatorial Circumference
	<i>Sun Equatorial Circumference divided by Earth Mean Circumference equals Moon Equatorial Circumference: 4366813 / 40030.2 = 109.08</i>	
Sun Equatorial Circumference	Earth Equatorial Circumference	Moon Polar Circumference
Sun Equatorial Circumference	Earth Equatorial Circumference	Moon Mean Circumference
Sun Equatorial Circumference	Earth Equatorial Circumference	Moon Equatorial Circumference
	<i>Sun Equatorial Circumference equals Earth Equatorial Circumference times Moon Equatorial Circumference: 4374587 = 40075 x 10916</i>	

**Earth/matrix Editions**

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