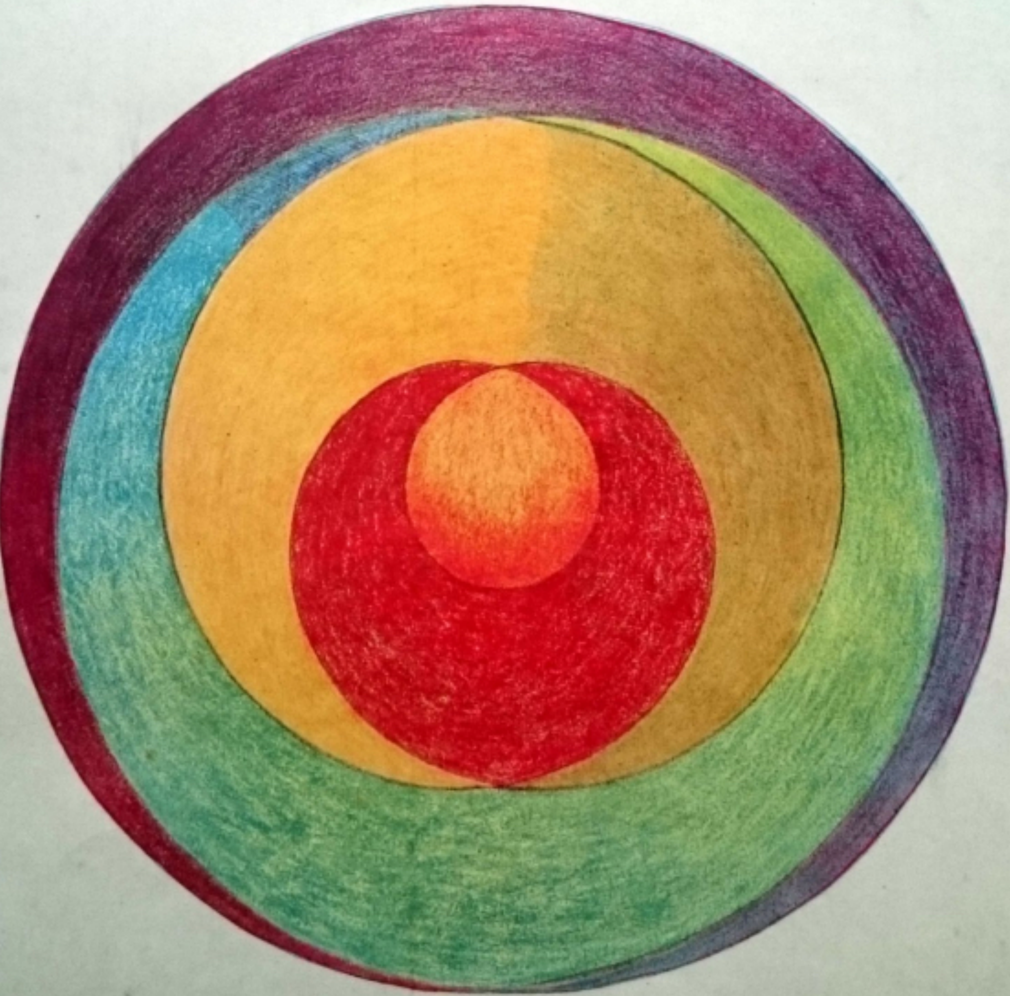
Dr. Ernst Barthel Lecturer at
the University of Cologne

Geometry and cosmos

without excess and without suppressing small differences



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Geometry and cosmos without excess and without suppressing small differences

In addition to a new illumination of the questions of the earth line curve, the squaring of the circle, the division of angles into thirds and the law of non-uniformity

With 21 figures

from

Dr. Ernst Barthel Lecturer
at the University of Cologne

Motto:
The science of geometry is not a building of fictions, but the knowledge, achieved with logical necessity, of the eternal Platonic ideas and laws of harmony which underlie the entire existence of the world, both large and small.

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The curve on the cover is drawn with Dr. Barthel's transformation circle (for more information, see "Man and Earth in the Cosmos", Richard Keutel Publishing House in Lahr, 1939).

The following reference works provide information about the author:

J. C. Poggendorff's biographical-literary dictionary of mathematics, astronomy, physics, etc., published by the Saxon Academy of Sciences in Leipzig, edited by Prof. Dr. Hans Stobbe, 1936, page 133.

The literature of the Cologne lecturers, edited by Hermann Corsten, Cologne 1938, pages 400-405.

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Contents.

Introduction.

This brochure was written by the representative of "polar geometry", according to which the Euclidean theory of parallel lines and the infinite space associated with it contain a logical error. Straight lines on the plane must always have the property of principal spheres, namely intersecting at two real points at a distance of 180°. If yb is parallel to the X-axis, the unit b suffers a differential reduction with distance, which makes y0 at the point of intersection.

LINE INTERSECTION-AT-MAXIMUM-DISTANCE.ON.90.

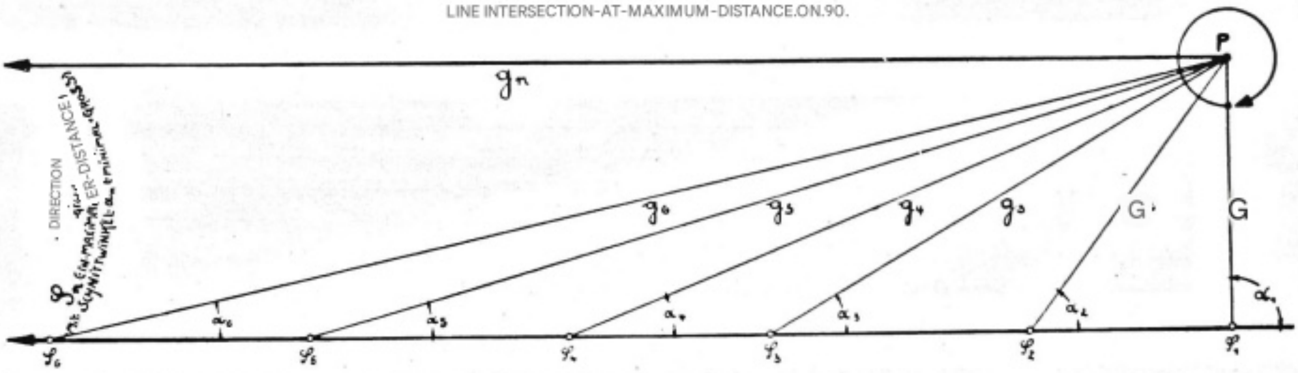

Figure 1. .

If the straight line g rotates clockwise around P, a lawful process occurs which is characterized by the fact that the angle alpha becomes smaller and smaller, but the intersection point S always remains on the base line. The case gn during the rotation must also be subject to this law and this fact. Otherwise a miracle would have taken the place of a law.

The figure opposite provides any thinking person with a simple proof that straight lines on the plane can only behave like principal circles on the sphere, but never like parallel circles on the sphere. The usual logical impossibilities with which all students are spoiled in their minds - for example, that in the case of symmetry there can be no intersections, but that they are — nevertheless "inauthentic" - are comparable to the attempts of a criminal to talk his way out of the fair eye of the judge by means of contradictory excuses. The usual parallel deception also has nothing to do with the entirely justified introduction of imaginary intersections, which is explained in more detail than before on pages 49-51. Polar geometry is the geometry of legitimate continuities everywhere, even in imaginary courses, but the abolition of all contradictions that are based only on impure logic and low mental strength. What was established in the childish mental state of humanity 2000 years ago does not necessarily have to be correct in the eyes of the critical discernment of a thinking person of the 20th century, even if the parallel claim and infinity claim of the Euclid, which means exactly: It is impossible for the plane to be a totality that could be mathematically justified. (See Introduction to Polar Geometry. Leipzig, Noske, 1932. Delivered by Fr. Foerster, Leipzig.)

Here, further insights into the foundations of geometry and the cosmos are presented: the theory of the primary earth line curve, which proves that the area of the ordinary circle is usually given with a special inaccuracy, the abolition of all infinite series through the logic of non-uniformity, and the presentation of the scientifically undoubtedly interesting problem of a friend of geometry.

metry on the squaring of a circle, as well as an important discovery by another on the thirding of an angle. The whole of the work, with its outlook on the structure of the cosmos, represents a further advance towards complete clarity compared to my earlier books.

It is demonstrated here in a majority of cases that the logic of uniformity in the number and calculation system 1) and in the regular circle leads to micro-errors that reveal a new natural law of mathematics. These micro-errors should never be expected for reasons of symmetry. They are based on the fact that the inner structure of the number series and the geometric shapes has irregularities that can be described, for example, as accelerations and decelerations, while the usual logic assumes constancy. The fact that the geometric relationships in the ordinary circle reveal this natural law is a completely new and far-reaching discovery.

Nature, and therefore geometry as a fundamental science, is everywhere non-uniform. When one calculates and draws in uniformities, the schema of the mind produces a micro-error compared to the absolute consistency that one would actually expect. This becomes a macro-error when the scale becomes larger. It is connected with the spherical nature of space.

That there is a deducible connection between the polar geometric property of space, like a periphery of 360 degrees, which I have already fully proven, and the so-called flattening of the earth (inequality of the spatial axes), and that these two circumstances are in turn connected with the obliquity of the ecliptic, with the peculiar position of the magnetic poles on the earth and with the purely geometrical law of circles itself, as the thinker discovers it in his study without even thinking about cosmic nature, is a new and important insight, which is the merit of my colleague Rudolf Kommer.

The geometric space law is identical to the earth law. This is a completely universal proof that the earth is not a vanishing random ball in space, but that it is an essential part of space itself, as I have argued since 1914 in my theory of the earth as a maximal sphere in polar geometric space. The challenges to Newton's law of gravitation are irrelevant because all masses and distances are calculated differently depending on the geometric system, while the observed times and angles are independent of each system. Coherence exists in every consistently applied system.

This is again connected with the fact that certain decrees of impossibility for solving the simplest tasks with compass and ruler, such as dividing any angle into thirds or transforming the area of a circle into a square with the same area, are legitimate within the framework of the usual analysis, but that this is not a final decision. For the analysis of uniformity and the circle of uniformity with which one makes machine wheels contain a micro-element of disturbance compared to the organic, natural correctness of the geometric relationships.

The reason for this deviation between regular circles and organically correct circles is that everywhere in nature the circle is a result of the free rotational force, while in the technical art circle the radius is taken as a fixed radius in the compass in order to make the rotation, i.e. to "make the circle". Here the rotation is not at all the cause for the formation of circular radii.

What is connected in nature, namely rotation and the creation of circles, is inorganically separated in the technical sphere: the radius is completely independent of the rotational movement. But this is connected to the fact that a regular circle must always be a theoretically incorrect circle, which distorts the law of nature. This law is fundamentally always such that inequalities in the radius, even if they are minimal, accompany the polarity and rhythm of the swing. The earth line curve is the organically correct circular line, and quantitatively too, as we will prove. The main axes of the organically correct circle, which are perpendicular to one another and in which all harmonics are fulfilled without micro-errors, have a "flattening ratio" of around 1/270.

The micro-error, which is noticeable from all sides in the same way, is also related to the fact that the sum of the angles in the triangle has the "spherical excess" that it also has in polar geometry on

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1) The usual calculation system as a sign mechanism remains the same, of course. But it must be recognized that it has to formulate non-uniform processes if it is to do justice to nature and the objective structure of geometry. Geometry has an objective structure that is not determined by man, but that man has to recognize from the given connections as from natural facts that God made independent of man. That was also the view of geometry held by the Greeks, and by all modern mathematicians who were not fictionalists: Kepler, Lambert, Euler, Leibniz, Pascal, Poncelet, Brianchon, and in the 19th century by the mathematicians who remained genuine and who did not succumb to formalism without any essential relationship to nature.

the plane, as it already contains a microscopically small "error". The calculation of this angle sum by means of opposite and alternate angles is consistently based on the confusion of two straight lines in a symmetrical position, which must behave like main spherical circles on the sphere, and thus can never have a constant distance, and lines of constant distance, of which at least one must have a curvature deviating from the straight line, because only under this condition are "parallel circles" possible on a sphere's surface.

The microscope, or the precise calculation under suitable experimental conditions, shows in infinitesimal Smallness is the "error", or rather the law of nature, which manifests itself on large terrestrial scales as a roughly noticeable difference. The sum of the angles in an ordinary plane triangle is only approximately equal to 2 right angles. Strictly speaking, it is somewhat larger, and the extent of this difference depends on the extent of the chosen line lengths. The geometry of "geometric similarity" independent of any scale is not a natural, but merely a convenient, but unfortunately false, assumption of the mind.

In the twentieth century we stand on the threshold of a revolution in the whole of mathematics and cosmology according to the principles of non-uniformity.

This brochure would have remained unwritten if two friends of geometry had not given me important impulses almost simultaneously, as if by fate. Rudolf Kommer, an architect in Cologne, a former listener to my lectures, made valuable discoveries on the question of dividing any angle into thirds using compass and ruler on the basis of the law of symmetry and came up with the great idea that the ordinary circle with the same radius on all sides carries a microscopic error in pure number harmony, which is corrected by a "circle" flattened in the sense of the geoid. Mr. Kommer will publish the relationship of this idea to his problems of dividing into thirds and circle harmony in more detail. He gave me the impetus for this brochure by critically examining the calculation of the area of a circle, which leads to the new conclusion: If one does not want to commit any omissions, the area of a circle requires a somewhat larger ratio than the regular circle, for which 3.141.... is the ratio.

Max Köhler, a pharmacist in Kassel (honorary chairman of the cultural centre), has now discovered a connection in the circle which is so closely related to the old question of squaring a circle that conscientious mathematicians must necessarily take this matter into account. It is a case of balance and symmetry in the most varied respects. This is obviously identical with the finding of the square with the same area of a circle, and the same microscopic error makes itself known to prove that it is not an "error" at all, but that our analytical thinking about the circle and about numbers needs a small correction. The regular circle and regular analytics contain a micro-error. The basic features of Köhler's discovery are published here in understandable terms. Mr Köhler reserves the right to publish the entire rich circle harmony relationships that are connected with it. Here the fundamentals should be worked out precisely in their important theoretical relationship by a logician.

I am deeply indebted to both amateur mathematicians, because despite the resistance of a poorly understanding environment and despite much lack of interest, they have developed insights through their ingenious geometrical insight, the value of which for mathematical research cannot be overlooked if one takes into account the important logical problems associated with them. Mr. Rudolf Kommer, who recognized, among other things, the geometric importance of the geoid, and Mr. Max Köhler, who proposed a circle quadrature which only the superficial would dismiss as in principle "long since settled", have the credit for the creation of this brochure, which is also duly mentioned in the course of the text.

The author has the following merits in presenting the two epochal discoveries by Köhler and Kommer. He spent two years trying to penetrate the obscure terminology of the former, and when he finally found that this was a gem, he tried to formulate it clearly and logically and to give serious reasons and proof. In the case of Kommer's division into thirds, he prevented circular arguments and expressed the argument in logical cogency on the basis of the symmetry principle, which alone shows how enormously important the emerging new discoveries are. The value of these discoveries could only be recognized in the cooperation of the logician with the brilliant discoverers. Köhler's case would have been laughed at without a clear presentation, and Kommer's would have exposed itself through circular arguments. In addition, it was of particular importance to recognize and utilize the inner similarities between Köhler's and Kommer's discoveries. Therefore, I consider it a special twist of fate that it allowed, in such a rare way, "three independent straight heads to pass through one point." For the relationship to my polar geometry is also obvious.

Polar geometry is based on the following axioms, which must be connected to any realistic thinking that is based on reality: 1. If a point moves on a straight line through space at an accelerated speed, it can never disappear from space as a result of this movement, i.e. when a second straight line rotates clockwise and sets the point as an intersection point on the first straight line, it must occupy a specific location in space at every moment of time, which has a specific measurable distance from the starting point.

2. If it is logically assumed that a distance is or should be or must be greater or smaller than another, then it must be impossible to equate the distances which are necessarily unequal.

3. All geometry, especially "projective geometry", requires the points of intersection between parallel lines at a maximum spatial distance of 90°. Until now, people have spoken of "improper points" because they were stunned by the Euclidean impossibility theory of parallel lines that should behave like a circle and an equator on a sphere (namely like "parallel circles"). (See, for example, Dochlemann-Timerding, Projective Geometry 1937, Göschen Collection, pages 5, 6, 8, 61.) My "Polar Geometry", published since 1919, represents with complete clarity the proposition that improper points, which by definition cannot be points, can only be based on improper honesty, and that this must radically disappear from geometry.

In addition, light is a ejected movement. The speed of light must therefore slow down. The assumption of a constant speed of light is just as contrary to nature as calculating its size using the Euclidean distance numbers on Jupiter's moon or by setting a mere initial speed constant. speed in the experiments of Fizeau and others within the optical horizon on earth. This is — also the place to make a fundamental statement about the relationship of polar geometry to the "visuality" and "imagination" of man.

Every geometry, even Euclidean geometry, is something unimaginable insofar as it exceeds our optical horizon. We can neither imagine that and how Euclidean progressions continue to infinity, nor that and how polar geometric progressions behave when they exceed our optical horizon of imagination. In this respect, therefore, every geometry is an unimaginable matter. But surely there is no one who would want to abolish geometry among the sciences because of this!

The difference between infinity geometry in the Euclidean system and my polar geometry (for which one should always refer to the "Introduction to Polar Geometry" from 1932 until a third edition appears, even if it still has weaknesses in its presentation) (published by Robert Noske. Available from the Commission Bookstore Fr. Foerster, Leipzig) is as follows:

Polar geometry can be visualized as a whole through the completely intuitive study of the surface of the sphere, while Euclidean geometry as an eternal fragment does not even have this advantage of intuitiveness, quite apart from the fact that it is proven to be logically impossible if one wants to maintain the identity of an intersection point with itself.

I must therefore state here that polar geometry has a great advantage in terms of visualization. To those opponents who contradict me because they need a "visual" geometry, I point out that polar geometry, which can be studied in its entirety on the surface of a sphere, is the only visual geometry, since Euclidean geometry gives nothing more than nebulous statements about the "infinite," the "impossible," and the "improper," which no logical ostrich stomach would be able to digest, and which cannot be imagined or viewed.

If, in my conscientiousness, I have not previously emphasized this advantage of polar geometry, but have always said that one simply cannot imagine how the straight line does it, in order to run back into itself far beyond our horizon, one must not misuse this to accuse polar geometry of being less conceivable than Euclidean geometry, of being a mere logistical chimera in the manner of the thinkers of the 19th century, including Riemann, whose mere logistics I overcome with my unambiguous polar geometry.

On the contrary: polar geometry can be represented in a completely clear manner using cartographic images with mathematical laws, of course with the cartographic distortions or curvatures without which no cartography of the whole, such as the surface of the earth, is possible. But if I name a whole series of visualization methods by which the total plane and total space can be represented in a lawful and clear manner, then I am doing my duty, and I will not allow myself to be reproached for this, as does the book "Controversial Worldview" by R. Henseling (Reclam Publishing House, Leipzig).

The Lambert coin as a representation of the total sphere surface and the reversion sphere as a representation of the entire spherical space are legitimate imaging methods. And what I have been giving here since 1939, the representation of space as a double maximum sphere (Figure 20), is probably the best possible representation of the entire universe that can be imagined. The fact that such a mathematical imaging result

It follows from the necessity of the matter that it must be grasped with a thoughtful eye and not simply as a primitive image. One will never be able to fit the cosmic in all its grandeur into the narrow cage of a human imagination without distorting it. But humanity will quickly get used to the fact that the picture book for sixth graders must be replaced by the picture book for upper third graders. Or do you really want to stay in sixth grade forever? I don't think so.

Without the scientifically logical incorporation into the larger context of "polar geometry", mathematics without infinite series, and the logic of non-uniformity, both important discoveries of new circular harmonies by Kommer and Köhler would probably be condemned to oblivion, considering that mathematical journals do not accept anything critical of fundamental principles and that philosophical journals have long since lost interest in mathematics and logic. So I hope that my work will be fruitful for researchers and readers as a form of logical-mathematical thinking, trained by Leibniz and Lambert.

I would also like to thank the architect Rudolf Kommer for producing the cliché-ready drawings and for discovering the synopsis" (Figure 17).

I am also grateful to the participants of my seminar exercises on spatial theory and logic at the University of Cologne in 1938/39 for many suggestions for discussion.

To indicate the fundamental importance of my way of understanding nature, and that this is already appreciated by insightful men, I quote a few sentences from a longer report by the naturalist Edgar Dacqué (Munich) on my peculiarities:

The characteristic feature of Barthel's working method, which he not only presents purely in terms of natural history, but which also leads to a general epistemological justification, corresponds to Unger's image (cited above) of the creation of a new coordinate network; it is a way of posing and dealing with problems that makes it possible to create new knowledge curves through the already existing and newly emerging knowledge material and thus to open up new paths for natural science to previously unknown connections - paths that he not only develops in ideas, but which he himself already takes, through direct practical research. I consider his research method to be highly significant in the history of science." (January 2, 1931.)

The author has been defending his geometric and cosmological teachings since 1914, and can therefore now, in 1939, celebrate the solemn commemoration of twenty-five years of upright struggle for a good cause. He has received only one honor, since his views on the earth in the cosmos seem to confirm the poet Strindberg's premonitions: in 1925 he received the Strindberg Prize for his book "Philosophy of Life" with the chapter "Earth and Cosmos" (Schulte-Bulmke Publishing House, Utting am Ammersee, 1923).

Cologne, February 1939. Ernst Barthel.

Theory of the Earth line curve and the natural circle area number.

The following develops a chapter of careful geometry, based on the principle that segments which must necessarily be unequal cannot be equated, or that the polar counterbalance between 'Too Large' and 'Too Small' cannot be leveled by claiming that both may be treated as a mean size, which by definition cannot be the case. The consequences of such a perspective are significant. They reveal a polarity of maximum and minimum lengths of a certain length family, where the leveling thought asserts the equality of all elements of this length family. A law of nature of increase and decrease, plus and minus, appears where this polar law had previously been omitted from the law of the real 'for the sake of simplicity,' although logically it cannot be. It results in the realization that a circle or a sphere, whose perpendicular main axes exhibit a microscopically small difference, are primary geometric entities. The fact of

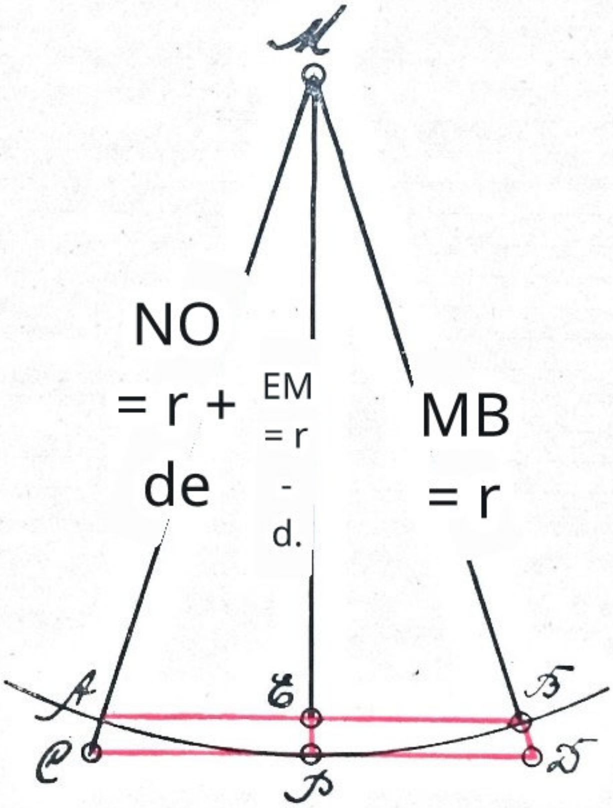


Figure 2.

Nature, which always only shows slightly 'flattened' spheres and circles - such as the geoid itself, planets, the moon, fruits, and trajectories - but never regular circles as one draws with a compass, is recognized as a necessary geometric fundamental fact. An important consequence relates to the circle area number X, i.e., the number with which measured the circle area has a content of 12X. It is shown and proven that this natural circle area number X cannot be identical to the number derived as the perimeter number of the regular circle, which has the value 3.141... The natural circle area number X is greater by a microscopic amount, which will be precisely determined. It follows that everything proven regarding the regular circle line number x - such as the transcendence from which humanity's permanent inability to transform the circle area into an area-equivalent square arises, which only comes about through circle lines and straight lines - has no validity for the natural circle area number X. The first thought of this new insight was had by the architect Rudolf Kommer in Cologne, who, based on valuable discoveries, derived the general connection of each angle with its exact third.

who, with perfectly clear proof using only straight lines and circles, or with its exact triple, first expressed the idea of the significance of the earth line curve as the sole inventor. I initially rejected the matter because it seemed adventurous to me. However, Max Köhler's discovery in Kassel compels me to draw this conclusion as well. Here, I will present this discovery of a central equilibrium position between polarities on the circle, calculated quantitatively, and explain the consequences. First, however, after this introduction about the meaning of the treatise and the occasions that led to it, I must begin with a very simple but careful reconsideration regarding the calculation ratio of the peripheral length of a regular circle to its diameter. By Unter ,7", one understands by definition the Ver of the circle area content. The calculation based on the enclosure of the periphery from the inside and outside by polygons, which are partly chord polygons and partly tangent polygons, is initially flawless. The periphery lies precisely "between" the value that is too large and the value that is too small. Nothing more is claimed. The periphery of the regular circle thus has the length ,, 2ra", and this & has the calculated value 3.141 ... This « is, as Lindemann has proven, a "transcendental number". If, with respect to this a, the circle area content is "r2,", then a ,, squaring of the circle" with compass and ruler is impossible. But now the circle area content is a formula that is established on the basis of a specific derivation. It is not definitionally established that the circle area content is ",r 2 ,", as it is definitionally established that the peripheral length is equal to ",2r.7", - rather, the circle area formula is based on a very specific derivation, which I now consider. In Figure 2, a chord triangle and a tangent triangle on the circle are visible, with a common center M and a common direction of the bounding sides MC and MD. The inner triangle has the radius of the circle, r, as its two sides MA and MB. As its height, it has a length that is designated as r-d,. The outer triangle, on the other hand, has the radius r as its height, while each of its sides is longer than r. I call the side MC or MD = r + d2. Now the calculation of the circle area content is based on the following line of reasoning. One allows the central angle in the triangle to become extremely small and fills the entire circle area with a very large number of equal triangles. The content of each individual triangle is represented by the formula ,, half base times height". The sum of all triangles apparently has the formula ,, half total periphery times height", because the sum of the half bases gives the half periphery. In doing so, however, the method of a certain concealment of necessarily existing differences begins. Namely, one says: If one sets the central angle very small, then both in the outer triangle and in the inner triangle the height becomes equal to the radius and the periphery becomes equal to the sum of the bases, and one obtains for the circle area the content "half periphery times radius". And since the half periphery of the regular circle is equal to r . a, one assumes the content as ,, r ? "". Microscopically considered, that is the concealment of an always necessarily remaining difference between the quantities r - d, in the inner corner and r+d2 in the outer corner, and the radius r itself. One should not come with the talk of the "infinitely small" with the known falsifications associated with it, but one should realize that as the central angle becomes smaller, the differences dy and d2 become smaller and smaller, but that they must always remain differences in principle, otherwise the principle of derivation from triangles would be destroyed and abolished. For no human being has ever been able to conceive of oblique-angled triangles in which the sides are exactly as long as the heights that belong to them. It means committing a concealment of a difference and a falsification of a state of affairs if one lets the height in the inner corner become equal to the radius, which must always be longer, and if one sets the sides in the outer corner equal to the radius, which must always be shorter. As long as triangles can be spoken of, the height in the inner triangle is smaller than the radius, and in the outer triangle the base line is and remains longer than the periphery.

In other words: If one calculates the circle area content according to this scheme, the inner triangles always remain smaller and the outer triangles always remain larger than the sought content. Both at the same time is important. It would be wrong, because it is unfounded and one-sided, if one wanted to apply only the inner or only the outer consideration and then indicate an area content of the regular circle either too small or too large - because it is so convenient to make mistakes. Rather, it must be emphasized in every further consideration that inner consideration and outer consideration are symmetrically equal, and that one without the other is inadmissible from the law of symmetry and polarity. Now one could say with the usual practice: since the circle area content appears once too small and once too large, one takes neither one case nor the other, but one imagines an average value that belongs to the exact radius r, while the outer corner is afflicted with a length r + de and the inner corner with a length r - d,. This desire to come up with something that is neither one thing nor the other is, Cannot be fulfilled before careful thinking, because the geometric reality must either be one or the other. Only for capricious thinking could it be said that one wants to assume a middle case that is fundamentally incapable of existence. It is and remains a fact that the total radius of the curve, from which one wants to derive the area based on the triangle formula, is sometimes too long (centrifugal) and at other times too short (centripetal). One cannot abolish either one or the other through the empty assertion that one wants to think in a 'mean value' that cannot exist as a formula in principle. This means for clean logic: If one tries to formulate the area of a circle based on the triangle formula, one discovers that it simply cannot be done. Rather, one is forced to square a curved surface instead of the regular circle, which is either too wide or too narrow compared to the area of the regular circle. This compulsion of facts can be represented figuratively-algebraically in such a way that one places a figure instead of the regular circle, whose both main axes, standing perpendicular to each other, have a microscopically different length.

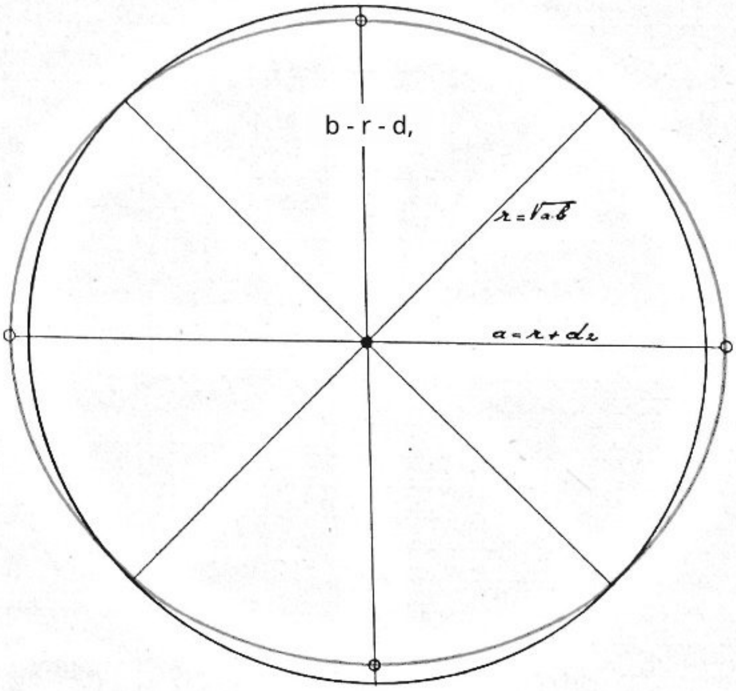


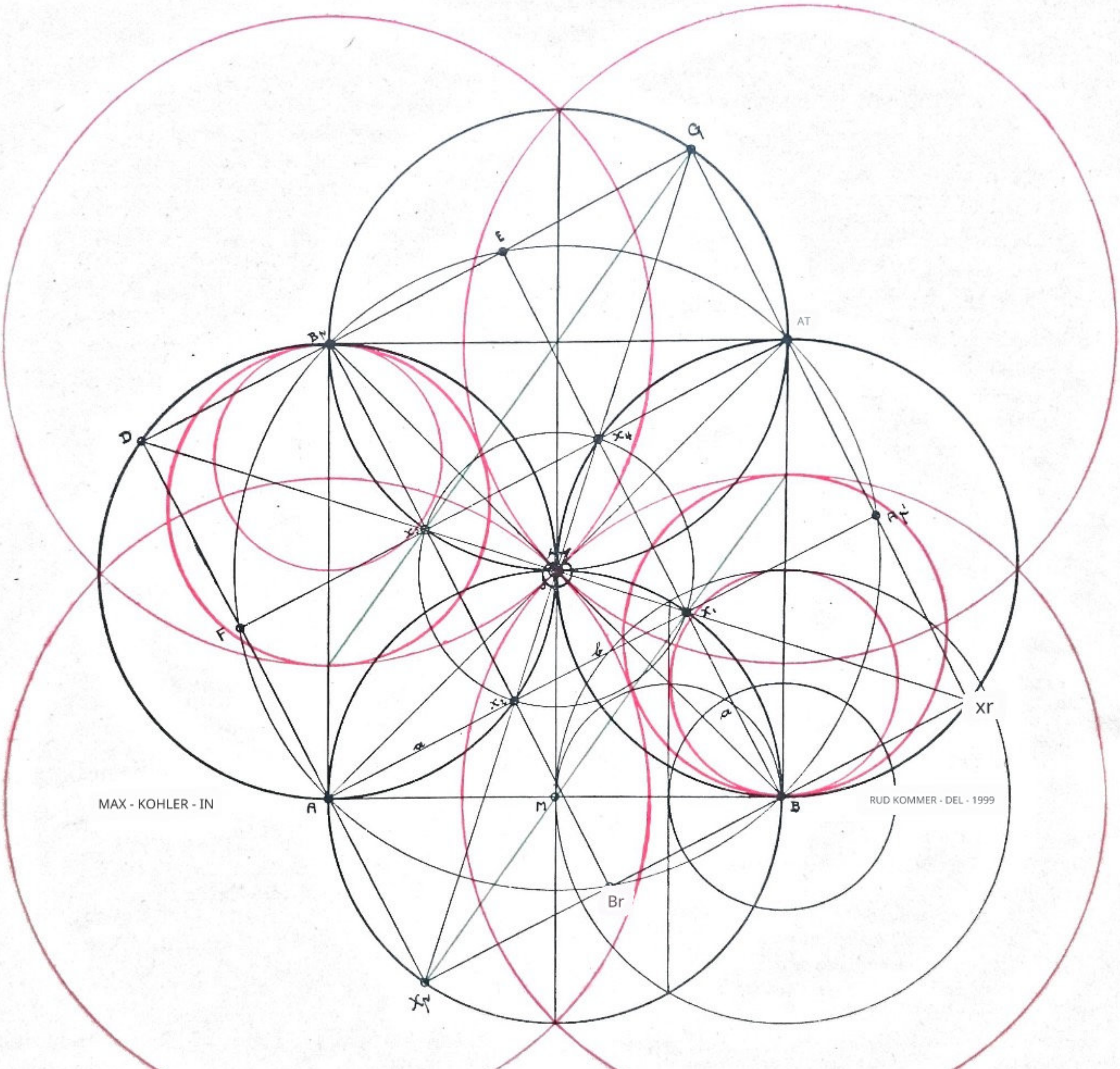
Figure 3.

The triangle scheme does not appear in this polaristically natural curve as a series of congruent triangles, but instead of mechanical uniformity, there is a continuous alternation of 'Becoming Larger' and 'Becoming Smaller'. The actual radius or the mean diameter of the curve does not appear everywhere, but only as a transition radius where the transitions occur between 'Larger' and 'Smaller'. The quantitative relationships of the two axes are determined consistently and securely by pure geometry in Köhler's circle harmony as well as in nature on the Earth's body. More on that later. Now one must account for the qualitative image of such a curve. Figure 3 shows, in a strongly exaggerated deviation, the relationship between the regular circle and the 'Earth Line Curve', as I may perhaps name it now. The following should be noted. Both curves intersect at the radius vector of 45 degrees, 135 degrees, 225 degrees, and 315 degrees. The major axis runs horizontally and is called a. The minor axis runs vertically and is called b. a - b - 2d, where d is a fictitious mean value of d1 and d2. The exact radius r is therefore only present at the four intersection points; otherwise, there are continuous transitions. Furthermore, choose d such that in accordance with the laws of the ellipse 'r = $\sqrt{(a \cdot b)}$'. Furthermore, define: Circle and Earth Line Curve shall be called equally ordered if the area of the circle is exactly equal to the area of the Earth Line surface.

A theorem is already valid: Congruent circles and geodesic curves have the same areas that they enclose, but the perimeter of the circle is smaller by a microscopic amount (which will be determined later) than the perimeter of the geodesic curve. This follows from the general and proven theorem that the circle is the curve that has the smallest circumference among all closed curves in the plane for the same area, and that the circumference of any non-circular curve that encloses the same area must be greater. We must now continue to think in complete logical clarity. If one wants to express the area of the circle as a formula, one discovers that this cannot be done directly without error, but that one must calculate a circle-like figure whose main axes have a difference of 2d. This 'geodesic figure' indeed has the area 'r2X', where r is the radius that is neither too large nor too small, and X represents the ratio of the symmetrically halved geodesic perimeter to the radius r. Now X must be somewhat larger than z. For in the proven shorter regular semicircular perimeter, the radius r expands x times, i.e., with the precisely calculated circle constant 3.141... On the other hand, the same radius cannot expand T times in the slightly longer perimeter of the 'organic circle' or the 'geodesic curve', but somewhat more, since this perimeter is slightly longer. The number X is greater than the number 7 by a yet to be specified amount. The number X determines the area 'r2X' of the geodesic surface. The same number X determines the area of the associated circle with the same area. The associated circle with radius r thus has the area ',r2X', where X is the perimeter constant of the geodesic line. However, the perimeter constant z of the regular circle remains untouched. But we have the new insight that the circle area constant and the perimeter constant z of the regular circle are not identical, but the circle area constant X is greater by a microscopic amount than the perimeter constant a = 3.14... The question of squaring the circle is therefore not based on finding the 'V' with compass and straightedge (which is impossible according to Lindemann's proof), but on finding '1X'. That this correct 'VX' can only be found as a circle chord with compass and straightedge is irrefutable. The representation of Köhler's circle harmony follows with careful, critical reasoning. The quantitative amount of the axis ratio a:b and its derivatives is precisely determined by the statement of the geometric nature itself.

Köhler's circle harmony and its relationship to the squaring of the circle.

Max Köhler in Kassel has derived a specific circle harmony based on five years of work, which shows a balance case between opposing pole one-sidedness. The balance case along with these one-sidednesses presents itself in projective geometry as a special circle chord hexagon, which offers an irregular image (one side is, for example, only about 1.5 degrees large), and which exhibits a threefold coinciding symmetry (cf. Figure 9). This coincidence of three symmetry positions at the projective hexagon with certain values creates a special case, whose relationship to the question of squaring the circle is geometrically clear for reasons to be named. The microscopic source of error must be recognized in the nature of the circle in relation to the geodesic curve. Köhler's findings show, in short, that three specific hypotenuses of right triangles 'almost' pass through the same point, and that through this constellation a circle chord is determined by length and direction, which has the following very novel connection with the question of squaring the circle, which has been posed since antiquity and proven to be unsolvable regarding the circle constant number 2: The length of this segment is a 'VX', where X differs from su by a microscopic small amount, and the deviation ratio between the 'V=' (=1.7724) and the 'VX' (= 1.7761) is exactly the deviation ratio of the flattening of the Earth, about 1/270. In any case, the obtained circle chord is greater by a microscopic amount than the 'Vx'. And this is not a counterargument against the correct squaring for connoisseurs of the previous theory of the circle area constant X, but a reason to suspect that here the only correct squaring could be given in a purely geometric context.


G
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MAX - KOHLER - IN
RUD KOMMER - DEL - 1999

Figure 4.

The direction and length of this segment is now such that this circular chord has a uniquely harmonious relationship with the square erected on it and the square above the diameter of the circle, which no other circular chord possesses. See Figure 4. The side of the square above a chord always passes through the corner point of the square above the diameter, where the square side DE is divided in the ratio a : b, with a equal to the leg X1B and a + b equal to the other leg X,A of triangle AX,B. The following relationships exist: The square over the chord AX is $(a+b)^2 = a^2 + 2ab + b^2$. It consists of a^2 = DFX,B1, b^2 = X,X_X3X4, a.b = AFX3X2, a.b = EBpX3X4. The segment ZX is the decagon side of the circle around M with MA when this harmonic chord is present. 1) The circle around Z with ZA contains the segment b four times as a chord (namely A,A[', FA, By'B, and B,E), and b is in this circle the decagon side under the same condition. The total square DGX,X,' is divided into 9 rectangles, where b is always the middle part of the square side, which is complemented by a on the flanks: the middle square b^2, the 4 corner squares each a^2, and the 4 rectangles at the mid-sides each a.b. Note the usual position of point Z in the middle of b^2, in the middle of the square above the diameter AB, and in the middle of the total square with its 9 rectangles, with the decagon relationship. In any other chord, the proportions that harmoniously resonate here are torn apart: point X must split, the 1 2 becomes unrelated to the chord, and so on. Such a thing, which creates something in terms of length and direction that seems to stand in such a clear relationship with the harmony of the circular area, cannot be easily dismissed by any conscientious mathematician. It will now be shown that, purely mathematically considered, Köhler's harmony is something entirely unique, and that his circular chord is indeed the square side, i.e., that the square over this chord is equal in area to the circular area, according to the correct formula 'r^2X', where X occurs peripherally on the earth line curve, as has been proven, and not according to the incorrect formula 'r^27'.

*

Köhler's derivation is based on the contrast between 'radial' and 'peripheral' tensions, that is, on the contrast between a linear and a vectorial perspective. Cartesian coordinates and circular coordinates are analogues in the method of mathematics. The contrast between line and area is related to this, or between segment and angle, or between linear motion and rotational motion. From Köhler's 'Philosophy of Circular Oscillations', I will only mention the observation that the radial and peripheral moments at the circle represent a kind of masculine-feminine primal opposition. I would like to add that the purely radial entity is the square, that the circle contains the radial and peripheral moments, and that the purely peripheral moment exists in the cosmos, where according to the proven laws of the 'polar geometry' I have represented since 1919, everything linear is transformed into rotational. Space or the total plane is the purely dynamic spatial principle - as Köhler also expresses it - the sphere or the circle is the dynamically static, and the cube or the square is the purely static principle. According to such philosophy - let not the mathematician be frightened by it - the consideration of mathematics itself approaches. It is initially a matter of the fact that 3 hypotenuses intersect at 'almost' a single point. These three hypotenuses need to be explained.

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1) The micro-error occurring in the regular circle, which creates a small difference between the decagon proportions of the 'golden ratio' and the circle quadrature, can be qualitatively and quantitatively explained from the preceding and following such that the pure harmony of the two constructions exists only in the geoid circle. In the geoid circle, the decagon side is a little longer than in the regular circle, and the quadrature chord organically assigned to this decagon side towards the geoid pole is a little shorter. The whole is skewed in the geoid arrangement. Therefore, the micro-error does not have to be exactly twice as large as the normal flattening index 1/270. This is exactly the case when calculating V X = AX, based on the decagon side in the regular circle by applying the sine or cosine rule to triangle AZX. V X = 2 . cos 27°. The error index amounts to + 1/166. Here too, the micro-error that arises between the decagon side (golden ratio construction) and the quadrature chord in the regular circle reveals in its exact quantity the natural law of the geoid with the flattening index 1/270.

Given the circle around A with AB. The triangle A,BD is the first triangle. If r = 1, then one leg of this triangle is 2, the other is 1. The hypotenuse A,D is the '15'. If you drop a perpendicular from B to the hypotenuse, it meets it at point Q, which must lie on the circle's circumference, according to the theorem of the angle at the circumference in a semicircle. QA : QD = 4 : 1, meaning the segment A2D is divided into fifths by the length QD. The length of A,Q is, as anyone can easily calculate, '1 3,2'. Köhler calls this triangle, which can be imagined by erecting the radius BD on the diameter, the 'radial' triangle. Its sides have the ratio 'VI:14:15'. The second triangle is triangle ABG. It is the right triangle that forms half of the equilateral triangle above the diameter. It arises from two symmetrical circular arcs, in our

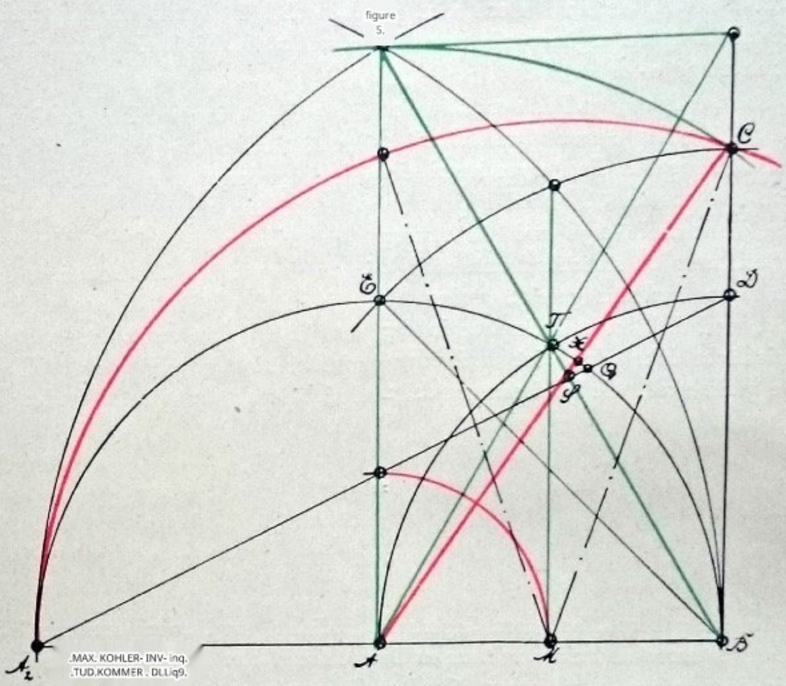

Figure 5.

The figure is approximately visible through the circle around B with BA, which intersects the base circle around A with AB at point T. Triangle ABG has, as anyone can easily see or calculate, the side ratio '1 1 : 1 3 : 14'. Point T bisects the hypotenuse BG. The triangle can be imagined as resulting from the polar opposite rotational movement of two equal circular paths. Therefore, Köhler calls this triangle the 'peripheral'. The length A,T is, as anyone can easily see or verify, '1 3'. These two triangles are described by Köhler as two unilaterals in a radial-peripheral double oscillation law of the circles. The first has something special to do with the number 5, the second with the number 3, which is lacking in the other. The two hypotenuses of these 'unilateral' triangles intersect at the important point S. Now there is a third triangle that forms the 'harmonic mean' between the two unilateral poles, which is proven by analytical geometry by the fact that its hypotenuse 'almost exactly' passes through the same point S. This third triangle, which according to Köhler's terminology is neither 'radial' nor 'peripheral', but synthetic, is obtained by making the radius AB the smaller leg, the square diagonal of the square with sides AB and BD the larger leg, by striking the circle with BE around B, which creates point C in the extension of BD. The hypotenuse AC then 'almost' also passes through intersection point S. The triangle ABC has the side ratio ',1 1 : 1 2 : 1 3'. The '1 3', which is the larger leg in the 'peripheral' triangle (AG), appears in the 'synthetic' triangle ABC as the hypotenuse.

Note that the aspect ratios of the three triangles are as follows: 11:14:15 for the radial triangle A,BD. 11:13:14 for the peripheral triangle ABG. 12:13 for the synthetic triangle ABC. Where the hypotenuse AC of the synthetic triangle, which as mentioned also 'almost' passes through S, intersects the circle around A with AB, lies point X. The segment A2X is the famous chord of the circle around A with AB, which has the property of being '1X' when one considers the area of the circle under the latter X.

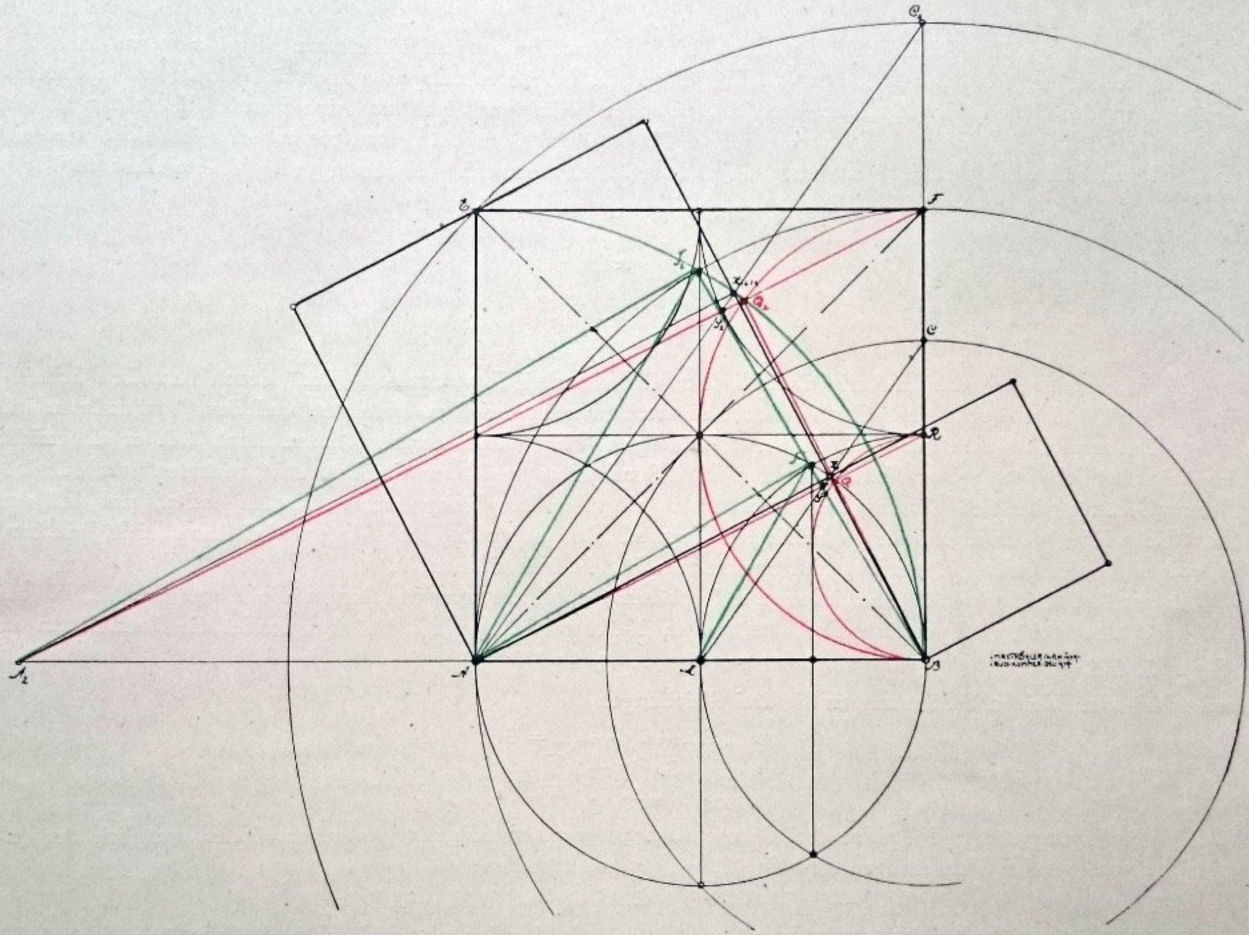

Figure 6.

number X refers to, regarding which the area of the circle is 'r2X', and which, as I have proven, must be greater by a microscopic amount than the area that is laid out in the periphery of the regular circle. As previously explained, the Köhler chord A2X is the chord whose square stands in a uniquely harmonious relationship to the square of the diameter (Figure 4). As one can see, nature itself here speaks a powerful word for the squaring of the circle, despite the decrees of impossibility. For the time being, let us consider the above Figure 6 with its many harmonious relationships with a contemplative eye. One should also make the following consideration. If one rotates the diameter of the circle around its endpoint A upwards, the circle's periphery cuts off a chord that becomes smaller with the progressing rotation. During this process of shortening chords, there must come a point where the square above the chord is exactly equal to the area of the circle. This chord was indeed discovered by Max Köhler.

Today's theorists, on the other hand, make a claim that is not only proven by me to be unfounded, because the area number X is not identical to the perimeter number x of the regular circle, but which is also nonsensical. Nature is expected to accept that a very simple and essential relationship, namely the equality of the area of a circle and a square, either does not fall within the realm of possibility at all, or at least cannot be inherent in the circle's harmony itself, which teaches us to find it with compass and ruler. Such unnatural claims can be 'analytically proven' for a long time. The analysis itself has microscopic errors. The facts of circle harmony speak a more significant word than the claim of habit, that it is merely something 'accidental' when such symmetry relations exist, and when three lines 'almost' pass through the same point! No, to learn and relearn this, as I have done, is an honor. The 'merely approximate correctness' and the 'small omission of differences' lies not in the Köhler circle chord, but in the essence of the circle and in the calculation of the area number of the circle, where the statement is wrongly assumed: 'A segment that must be smaller than the radius, and a segment that must be larger than the radius, is both simply placed into the Procrustean bed: if it is too short, it is stretched at the head and feet, and if it is too long, the protruding parts are simply cut off.'

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It is now necessary to provide the computational proof that the three hypotenuses 'almost' pass through the same intersection point, and how great the microscopic difference is between the Absolute and the Existing. This difference cannot possibly be presented as a 'coincidence.' It cannot be easily dismissed as if it were nonexistent. Rather, the viewpoint must be maintained that this 'error' has its deep cause in the essence of the uniformly radiused circle, and that the 'natural circle' is the organic, polaristic circle. The microscopic difference cannot prevent the fullness of all harmonies and symmetries from existing as they do. In establishing the three equations of the hypotenuses, it is best to take the midpoint of AB, M, as the origin of the right-angled coordinate system, whose X-axis is directed along AB. The normal form is applied (Figure 5. MB=1) and after minor transformations, the three equations 3/2x-3y +9/2=0, x. VB+y-13=0, x.12-y+12=0 are obtained. The condition for these three lines to pass through the same intersection point, regarding the immediately available normal form Ax + By + C=0, is as follows: A (B,C2-B,C,)+B(C,A2-C2A,)+C(A,B2-A,B,)=0. (See, for example, 'Mathematical Formula Collection' by Bürklen in the Göschen collection, edition 1907, page 130.) If one now substitutes the values of the three equations, one obtains after slight transformations 6 .. 16" =3. . 1/2" +6. , V3". The left side of the equation amounts to 14.6970 after logarithmic calculation; the right side yields 14.6352. This means: the condition for the common intersection point S is 'almost' exactly fulfilled. The microscopic error amounts to 0.0618. This means it amounts to the 'square root of the flattening of the Earth's curve,' if one wishes to approve this as an unspecified and varying value at 1/270. The magnitude of the error is certainly the geoidal.' It is not difficult to recognize that this error would be completely eliminated if one made the geoidal changes at the circle's periphery that would eliminate it: I say the tautological judgment intentionally! The originator of the geoid consideration is, as I emphasize again, the architect Rudolf Kommer in Cologne. He found the same in the angle trisection problem, which awaits exact recalculation and publication in his extensive circle-harmonic context. It is also confirmed in the new, fundamental theorems discovered by Kommer at the circle that the 'true' circle is not the one drawn with a compass, but the geoid circle. Based on the mechanical leveling of a

x/a + y/b=1.

The fine polarity in the Procrustean bed of uniformity is demonstrated by the regular circle obtained with a compass, showing microscopic deviations from the absolute consistency of symmetry and harmony relationships. This is a significant new insight, where three heads almost meet at a point: the discoverer Rudolf Kommer with his third harmonies, the compensating chord in the circle, which does not quite match, but aligns better with the area of the circle, by Max Köhler in Kassel, and the logician and representative of polar geometry, the author of this presentation.

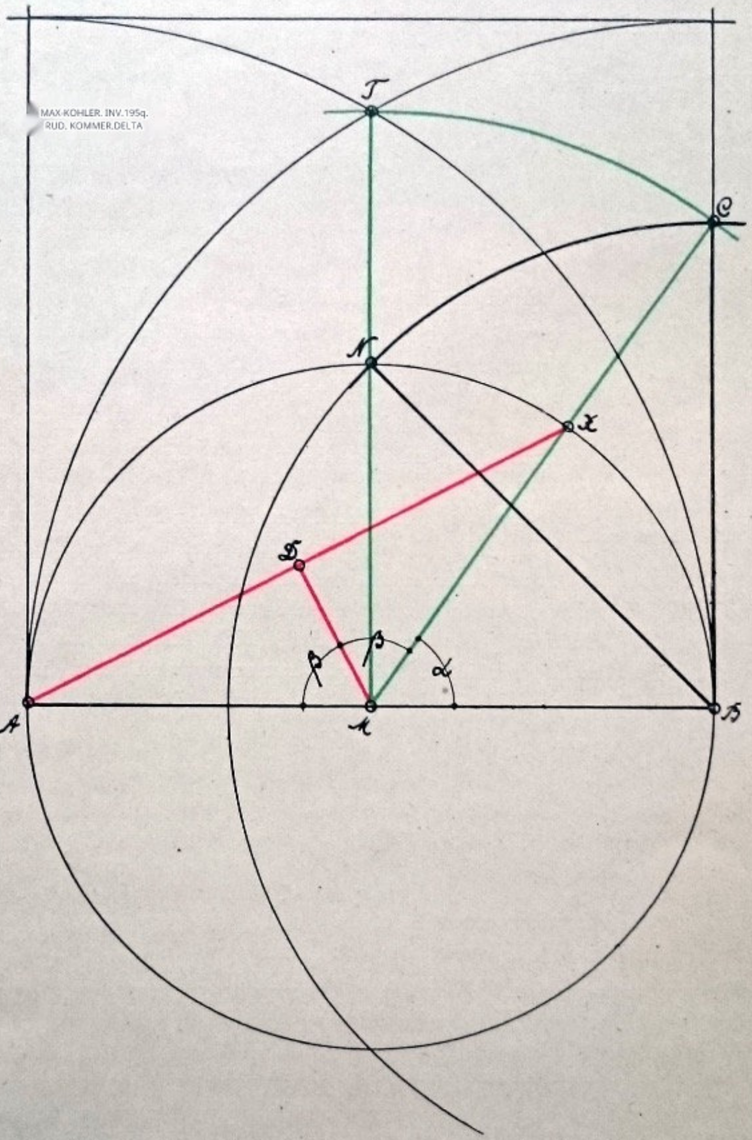

Figure 7.

If one does not represent the square roots on the regular circle, but on the geoid circle, then the equation, which is now 'almost' correct, becomes absolutely correct;

6.16=3 . 12+6 . V 3. (cf. page 53). And many signs and wonders will still occur, as will become evident in the following, from the 'Infinite Series' and 'Irrational Numbers' to the matters of the Earth in the cosmos, whose new theory can be found in 'Man and Earth in the Cosmos' (Richard Keutel Publishing in Lahr (Baden) 1939) and 'The Cosmology of the Great Earth in Total Space' (Otto Hillmann Publishing in Leipzig 1939).

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The calculation of the chord length is carried out according to the specifications of Figure 7. Tangent « = 1 2; thus @ = 54° 44' 7.8". 180 -"- 62° 37' 56.1". Sine ฿ = y. Therefore y = 0.88807. Consequently, 2y = Chord AX = 1.7761. (Calculation: Dr. Wilhelm, Hildesheim.) The V x == 1.7724. The microscopic error is 1/270. Thus: VX - V7 - 2 - b = Flattening.

*

The construction of the quadrature point X proceeds as follows: A perpendicular is erected at the endpoint of a diameter, a circle is drawn with the quarter-circle chord (= 12) around this endpoint, and the intersection point of the perpendicular and the circle is connected to the center point. The connecting line intersects the periphery at the sought quadrature point X. The simplest theorems on the circle, which have remained undiscovered for two and a half thousand years, solve those problems that have previously been proven "impossible" by an analytics that suffers from the logic of uniformity. It was also proven as "impossible" by physicists that humans can build flying machines. The unnatural impossibility decrees of the correct quadrature of the circle area and the correct trisection of any angle with the simplest relationships of circles and lines lying in circular harmony are now being addressed by world history, which demands that the micro-error in the regular circle and the micro-error in any analytics of uniformity be recognized as fundamental facts and fundamental laws of all mathematics henceforth, and that the mathematical age of non-polarity in space and in the infinitesimal has been overcome.

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A beautiful derivation by Köhler is as follows. (Figure 8.) Given is the circle and its circumscribed square. One folds the 4 quarter-circle arcs inward along the quarter-circle chord. This creates a four-pointed star shape inside, and outside, the four quarter-circle areas are laid apart. One center M is represented in a fourfold manner in the 4 corners of the square. The square over the chord AX is area-equivalent to the sum of the 4 corner quadrants, thus the full circle. And the square over the smaller leg BX is area-equivalent to the inner star shape. This seems to me both a particularly interesting application of the Pythagorean theorem and a relationship of ancient simplicity and beauty, which somewhat reminds me of the old theorem of the "moon segments of Hippocrates": If one draws semicircles over the sides of a right triangle in the direction of the right angle, two crescent-like areas are formed over the legs. Their area sum is identical to the area of the triangle - which is, by the way, a proof that circular area parts can complement to rational area sizes.

*

If one extends the chord XM to the opposite point X' of the circle's perimeter, a particularly central hexagon is formed in the circle when judged according to the principles of projective geometry, even though its smallest chord spans only about 1.5 degrees. See Figure 9. The hexagon in question is BQXTAX'. There is no other hexagon in the entire circle that occupies such a symmetrical position, theoretically speaking. Of the 3 diagonals of this hexagon, two, namely QA and TB, pass through the endpoints of a circle's diameter, while the third diagonal goes through the center of the circle, namely the diagonal XX'. These 3 diagonals intersect at a single point.

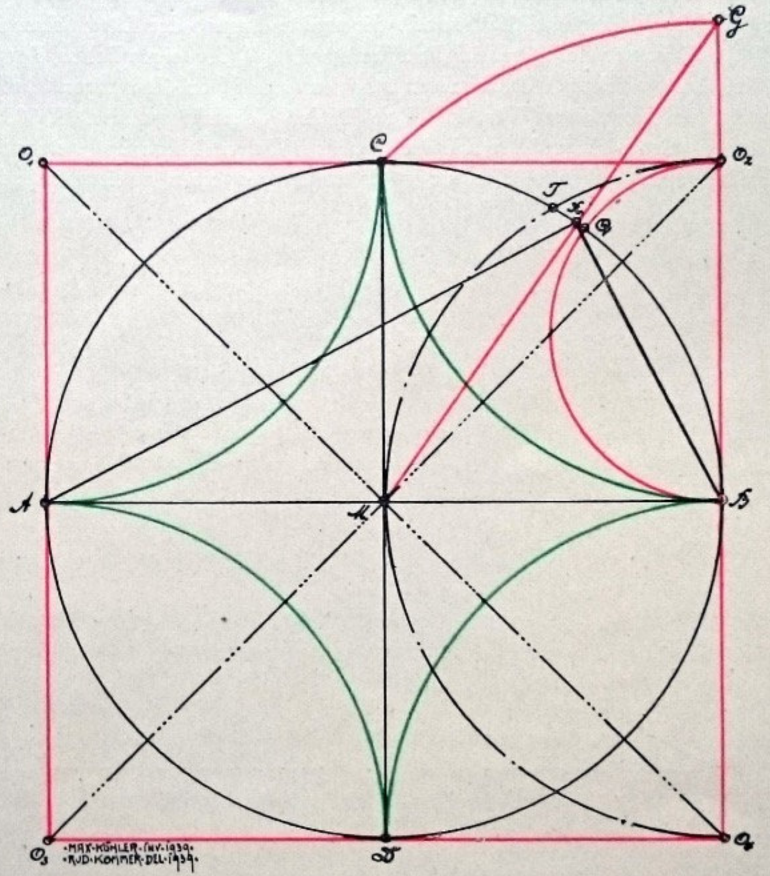

Figure 8.

while I consciously disregard the microscopic error in the regular circle. Furthermore, each pair of hexagon sides is perpendicular to their corresponding diagonals, namely BQ is perpendicular to QA and AT is perpendicular to TB. Such a symmetrically and vertically distinguished chord hexagon with such typical lengths does not exist anywhere else in the circle, no matter how irregular it appears. However, the most beautiful conclusion has yet to be stated: that this inscribed chord hexagon of a circle is simultaneously the tangent hexagon to an ellipse, if one considers the microscopic blur of the tangent intersection point as nonexistent for other reasons. For according to Brianchon's theorem, every hexagon whose diagonals pass through a point determines a conic section, where the six sides of the hexagon are tangents. The chord hexagon in the circle is a 'Pascal hexagon', which has the property that the intersection points of any two opposite sides of the hexagon lie on a straight line, the Pascal line. In this special case highlighted by Köhler, the Pascal hexagon is also a Brianchon hexagon, i.e., a hexagon whose sides are tangents to a conic section, which in this case, as one can see, can only be an ellipse.

The hexagon BOXTAX' is both a secant hexagon in a circle and a tangent hexagon to an ellipse that can be naturally determined. However, I do not want to preempt further research with these remarks. For our purpose, it suffices to understand that the centrally significant nature of this hexagon exists.

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To conclude this chapter, I note the fact related to the entire problem of the earth line curve, that in today's mathematics, the exact specification of the length of an ellipse's perimeter is simply not possible, because an inaccuracy summand 'o' must always be attached to the actual formula, and this 'o' does not have a fixed value; one can only say that it is greater than 0 and less than a certain other small value. (Cf. Láska, Formula Collection, p. 502.) The general determination of arc lengths (thus not only for ellipses but for curves in general) originates from the famous mathematician Monge. It is always inaccurate, i.e., it is burdened with a second infinite series besides z (Láska, p. 482).

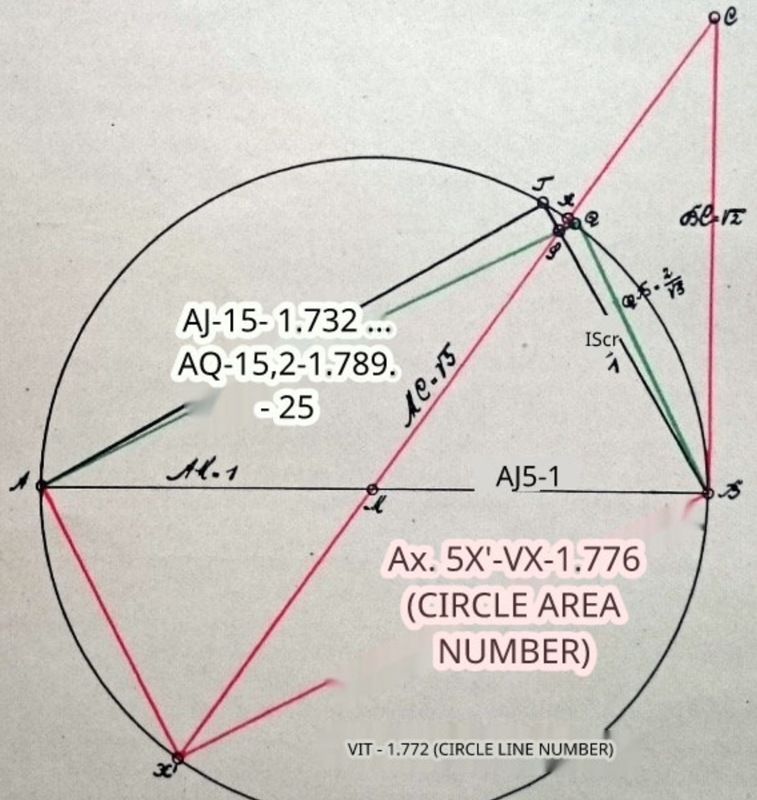

Figure 9.

Is it not extraordinarily significant that such a simply posed task, to calculate the length of an ellipse's perimeter, cannot be solved exactly, and that only the area of the ellipse appears as an exact formula, namely 'a · b · z'? We are faced with the fact derived by me that the perimeter of an earth line curve, thus a kind of weak ellipse, is crucial for the magnitude of the circle area number of the regular circle, as has been proven. However, this circle area number cannot be derived from the earth curve perimeter, because this derivation will itself remain burdened with an inaccuracy. Therefore, the derivation of the correct circle area number X can only be obtained from completely reliable elementary geometric measurements, for example, by measuring the Köhler circle chord AX.

or by measuring the commercial third division angles, or by comparing the 'flattening size' in typical algebraic contexts, under which I have shown the relationship here

$$6 \cdot \sqrt{6} = 3 \cdot \sqrt{2} + 6 \cdot \sqrt{3}\,^{1)}.$$

The microscopic deviation between 14.697 and 14.635 leads to the measure of flattening and to the exact length of an ellipse's perimeter that belongs to it. The regular circle is full of microscopic disturbances. Unlearning, learning anew is today's task of mathematical thinking. This will also be seen in the fourth next chapter, which abolishes 'infinite series' through clear logic.

Summary of the proof process for the Köhler chord as the quadrature chord of the circular area.

1. This chord is the central exceptional chord among all chords of the circle, with excellent symmetry and harmony relations, as Figures 4 and 6 abundantly show, in relation to the Golden Ratio, the decagon side, and so on. Only a part of these harmonies, which any mathematician can find, has been mentioned by me. Most astonishing are the relationships to the 'Golden Ratio', which will be published later: equilateral triangle, square, and regular pentagon with coinciding side, tangent to the same circle; thus the quadrature chord is determined doubly, and much more - and everywhere again the slight micro-error in the agreement appears, which disappears in the geoid circle, and which makes the Golden Ratio in the regular circle 'almost' the quadrature and from the quadrature 'almost' the Golden Ratio. Both constructions are based on the same proportions (12, 1.5, cos 27°, sin 18°), and both seek a square that should neither be too large nor too small compared to a rectangle or circle, which are formed from a wholeness principle and a part principle. 2. The length of this chord is 1.7761 at a radius of 1.

3. The length of Vx is 1.7724, where a is the ratio of the perimeter to the diameter of a regular circle.

4. It has been proven (Chapter 1 of this book) that only a neglect of small differences leads to the opinion that the circle area formula r27 can be derived as a primary and valid formula for the area of the circle with equal radius all around. The derivation is rather exactly correct only for a geoid-flattened 'circle', which has one axis that is slightly larger, and a second axis perpendicular to it, which is slightly smaller than the mean r of the regular circle. 5. The area of a regular circle, identical to the area of the associated geoid circle, is primarily linked to the perimeter circumference of the geoid circle, and not with the perimeter circumference of the regular circle, because for the regular circle the derivation of the circle area formula without neglect is not possible at all. 6. The perimeter circumference of the geoid circle is larger by a certain amount than the perimeter circumference of the regular circle. The amount of this normal flattening size, which is a geometric natural constant, is found to be 1/270 in various ways: the Earth allows this size to be measured as a mean between the fluctuating empirical determinations, the commercial third division (Chapter 4) shows it calculated, the equation

6.16=3.12+6-13 becomes exactly correct when this 'flattening error' is taken into account, three straight lines go through a single point under this condition (Figure 5), and - the Köhler chord is exactly 1/270 larger than expected when one holds V'a for the correct quadrature chord, which it is not. For all these reasons, it follows that the natural constant of the flattening of an organic 'circle', thus a normal geoid circle, is 1/270. 7. Therefore, there is not only no counterargument against the thesis that the Köhler chord is the correct chord, the square over which is exactly equal to the area of the circle, but this matter is also firmly and clearly proven by the fact that the excess amount of 1/270 over the expected length is exactly correct. Any future 1) See the exact formula on page 53.

The teaching of the 'squaring of the circle' must take into account that this problem does not relate to the transcendental Ludolf number a, which is merely the circumference number of the regular circle, but to another number that is greater by 1/270 in its root, and of which no one has proven and can prove that it cannot be constructed with compass and straightedge in the circle harmony itself, because it is just as demonstrably anchored as the trisection of any arbitrary angle (see page 28) in the circle harmony. Two claims of impossibility are thus refuted with this double discovery of two men and with my sharp logical elaboration of their scientific meaning, just as it is refuted what scholars have always claimed, that man cannot fly. He can. And any arbitrary angle can be trisected with compass and straightedge. And any circular area can be transformed with compass and straightedge into an area-equivalent square. However, what this investigation brought us is even more important than these individual points: it is the geometric law of nature regarding the micro-error in the regular circle and the geoid circle as the organically correct 'circle' that contains all harmonies without micro-errors. Köhler arrived at his insight through a polar consideration of the circle in contrast to 'radial' (partial) and 'peripheral' (holistic) tension and vibration forms that make up the world structure. This philosophy of geometry is as profound as it is difficult to grasp. From the above result, one may clearly assess that such a polar consideration is correct. Köhler was inspired in his thinking by the music-geometric research of Willi Oberle, whose tone scale trapezoid (1934), based on the twelve-partition of the circle for the chromatic scale, is of particular interest. 1) It signifies a renewal of Kepler's endeavors when in such organic research geometry, cosmology, and music are traced back to related laws of harmony, and at the same time, it is a continuation of Goethe's way of thinking.

Circle and square on the total plane.

The laws of the total plane are studied everywhere on a spherical surface. On this surface, one can allow a point circle to grow by increasing the radius to the maximum circle. For example, the ratio of the circumference to the spherically measured circle diameter changes. This ratio is at the point the Euclidean value 3.14... and continuously passes through all values up to 2 during the circle enlargement. For the maximum circle is twice as large as its spherical diameter. The law of the analogous square transformation from the Euclidean point square to the maximum square is quite astonishing. In the point square, what we are all accustomed to holds: that the square not only has equal straight sides, which are inscribed as chords in a circle, but that the square angles are also right angles. This last requirement cannot be combined with the aforementioned requirements on the sphere, as anyone can see. However, on the sphere, thus the total plane, there are indeed figures with four equal straight (thus main circle-like) segments that are inscribed as chords in the same circle. But these 'squares' do not have right angles. Their angles are larger the larger the square on the sphere becomes. The square angles are only equal to 90 degrees in the point square (thus in the Euclidean square of the plane, which appears as a point on the spherical surface). As the square side increases, the square angle also increases, and it reaches 180 degrees where the spherical square has its maximum size, that is, where the spherical maximum square has become identical to the spherical maximum circle. For there, the 4 sides of the square meet at an extended angle, and from the square, the maximum circle is formed. Circle and square are thus, viewed from the total plane, two different ways in which the maximum circle, which is also the maximum square, can shrink towards the point. Either one makes the reduction in the sense of concentric circles, or one makes the reduction in the sense of the movement of 4 square points on two diagonals that are perpendicular to each other. Circle and square have this 'coincidence in the maximum'. (Also compare Kommers 'Synopsis', figure 17.)

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1) See also Barthel, The World as Tension and Rhythm (Leipzig, Noske, 1928) page 184 ff.

Remark on the question of the rectification of the circular line.

It is clearly evident from the aforementioned that the transformation of the circle's perimeter into a line segment is a different problem than the transformation of the circular area into a square. The rectification of the circular line truly concerns the perimeter number a, which Lindemann has proven to be transcendental. However, all these analytical distinctions are mere formalism and sophistry, because one always presupposes the logic of uniformity, which creates infinite series. On this basis, one can then 'prove' amazing things: for instance, that even the diagonal of a square, which is an irrational number, cannot be taken into the compass. For it is an unapproachable length, based on an unfinishable number. We will eliminate such magic in the future through the logic of inequality, which abolishes all infinite series and replaces them with a series of a definite number of terms, the quantity of which can be specified from case to case (see the following chapter). Accordingly, every railway wheel can theoretically allow itself to rectify the circular line by rolling on a straight track. Moreover, the accuracy of the perimeter length is bound to no other source of error than the accuracy of the circle's radius itself. The markings alone set error limits and not a sophistical process of 'infinite series formation!': it is indeed. And the square diagonal (12) can assert itself as something just as definite as the square side, which in short means we radically eliminate any nonsense that has been introduced into mathematics with the popular 'infinity' and give reality its due honor.

The abolition of 'Infinite Series' through the logic of inequality.

What is derived in the following from a single 'Infinite Series' fundamentally applies to all 'Infinite Series', thus also to all irrational numbers in general, including all continued fractions, as well as all division processes and root extraction processes, which are based on the logic of uniformity. It follows for anyone who judges my line of thought as good or at least as a possibility, that in this respect the irrational numbers are abolished. The '1 2', for example, which appears just as harmless in the diagonal of a square as the side of the square, no longer has the malicious property of never being able to be exactly taken into the compass, because it can fundamentally never be precisely grasped. And the railway wheel, which unwinds its perimeter length on the track, thus elegantly and precisely lays down the distance '2πr', just as the platinum standard in Paris is laid down, against which all lengths are measured - this railway wheel also no longer engages in unfinishable mysticism, but something real. Just as I have eliminated the 'Infinite Great' in the geometry of space and thus the 'Imperfect Points and Lines and Planes' (see 'Introduction to Polar Geometry', 2nd ed., Leipzig, Noske, 1932), because I recognized them as illogical nonsense, I additionally eliminate here the 'Infinite Small' and replace it with the concept of the minimal small, which is reciprocal to the maximal large number, which is again quantitatively fixed in relation to the chosen unit to the spherical whole or to the 4 quadrant lengths of the polar geometric space that nature has created and laid out, but no human determination. I start from the old arrow scheme of the Eleatics: an arrow shot from a distance of 1 from a wall can never reach the wall if it is prescribed that it must first cover exactly half of each remaining piece. It always remains distant, and this assertion is independent of any time and any number. If the arrow first covers half the distance, then half the remaining distance, and then half the new remaining distance, etc., then from such a perspective, it can never touch the wall, let alone break through it. It is and remains eternally distant, for the same scheme repeats according to a law of geometric similarity of all phases. I consider the previous 'attempts at solutions' for this arrow problem of the Eleatics to be unfounded. The time that has been brought in has to do with this problem of spatial distance, which fundamentally in its scheme of

) These also do not have to do with relative uniformity, but with differential reduction of the divisor through o. They are all theoretically somewhat larger in result than usual.

Every time is independent, doing nothing. Vague statements, such as those of the Eleatics themselves: "The appearance of movement is therefore not a true being size," or with Bergson, who lets the oracle say that "continuity" is something different from discontinuity, cannot help us at all. As long as it is not recognized mathematically how the problem must be treated numerically to shed its unnaturalness -

the old question from Greek antiquity remains unanswered. My logic is now as follows. The demand for a division law that remains mechanically the same is evidently something that is not fulfilled in nature. For the arrow does indeed break through the wall and does not remain "distant" for eternity. And a curvature that is bent straight eventually reaches the straight line but does not remain eternally curved, - what I say as a representative of my "polar geometry." The conformity of our thinking with the laws of nature can only be achieved if we mathematically formulate a divisive division process that has the property of reaching the goal and even breaking through to the other side. Instead of the logic of infinity and limitation, there will be a logic that fulfills the whole without "infinity" and with a culmination point where the process continues into its opposite. Instead of the logic of uniformity, which contradicts the structure of nature everywhere, the logic of non-uniformity will emerge, that is, the organic polarity of acceleration and deceleration. There is only one way to modify the geometric series of the eternally progressing halving of the remaining distance so that it retains the property of not having to remain eternally "distant" but fully reaching the endpoint. This way should now be developed mathematically. I repeat that the choice of this "infinite series" has no further significance, but that analogous thoughts apply to any infinite progression, for example for the roots, for the trigonometric functions, for the Leibniz series for a/4, and for all division processes with which one usually calculates irrational numbers, especially roots or the number z or the number e, based on the logic of uniformity. The consequence for all these numerical results through the logic of non-uniformity is twofold: 1. From unfinishable "irrational numbers" become finishable processes regarding definite and quantitatively derived from the space constants maximal numbers. 2. The calculated numerical value undergoes a shift in favor of natural correctness in the further places behind the comma. Only the first places behind the comma are theoretically completely correct. My line of thought is as follows. If one wants to establish a division series, similar to the series 1/2 1/4 1/8 1/16 ..., which has the property that "the arrow actually reaches its target," one must equip the division rule with a microscopically small non-uniformity. And indeed, subject to the result of clearer calculation, one must make the size 2 differently in the advancing division process by a "differential," so that finally, after a certain, very large number of steps, the result is that the remaining distance is completely consumed, so that the arrow touches its target. Instead of the uniformity series

1 1111 ....,
222 2 2

which is infinite, the non-uniformity series 1
1 2 2+02+26 21 38 2+ 48 1 1 1 ... 1 ..
2 + no

Here, "0" means a yet quantitatively to be defined minimal amount, which is derived from nature itself, and whose size is imperceptibly small, although it is a quite specific size greater than 0. This series is not infinite, but it stops at some point. The condition of stopping must be examined. The principle must apply that divisions by "zero" or "infinity" must be avoided as a relapse into the old logic of unnaturalness. The concept of 0 may only appear in the only form that is error-free correct: namely as the result of the equation

$$a-a=0.$$

That is: Zero is obtained when one subtracts the amount of this distance from a distance. This is not an unnatural logic, but the logic of things. On the other hand, one never obtains zero when one divides a distance by any number, no matter how large. One must fundamentally be cautious of such divisions. Considering this, I make the following consideration. If the non-uniformity division progresses to the end, then the case of the arrow touching the wall must occur, that is: the last.

Division must have the same result as if one subtracts the same remaining segment from the remaining segment. In other words: if there is still a very small remaining segment left, and one subtracts the result of the division from this, it must yield 0. This can be expressed in equation form as follows, where the term 'max' denotes the maximum number at which the process achieves its goal. The quantity of this maximum number will then be derived shortly. The equation holds.

Imax I'max 2-max . 6 =0. (r denotes remainder.) In words: the last division has the same result as if one subtracted the last segment from itself.

Now, from this equation, the determination 2-+- max . o=1 arises, because the denominator of the above fraction must equal 1 if the requirement stated in the equation is to hold.

From this, the size of that invisibly small segment '0' is calculated, by which one must increase the quotient 2 in organic division so that the process can ultimately achieve its goal. This amount depends on the maximum number, which remains to be determined. The equation reads 8= - 1/max. This means: the equation teaches that o is a negative quantity, i.e., that one must always reduce the division ratio 2 by a differential as one approaches the wall, so that as one progresses towards the wall, the ongoing division process itself strives towards an absolute end by reducing the size 2. In this case, the wall is reached when, during the progressive approach, the principle of approach has eliminated itself. This progression thus converges towards the wall, where a transition into the opposite occurs: a departure from the wall begins on the opposite side, with the division quotient increasing as the distance grows, until it again represents the exact size 2 in the realm of macroscopic and conceptually bounded experience. In the microscopic small, a culmination process takes place that the logic of uniformity can never grasp, although it is the reality of the facts. The hyperbola is a good image for this process: two straight branches and a bending point. Now, it remains to quantitatively determine what the maximum number is. This must start from the fact, firmly proven in polar geometry, that a spatial diameter traverses its 360 degrees, thus being a specific maximum distance set by nature. The quadrant of this distance, i.e., 90 degrees, forms the culmination point of the four-pole development. It is therefore natural to connect the concept of the maximum number with the concept of the quadrant. Now, the length of this quadrant, expressed in arbitrarily chosen units, e.g., kilometers or miles, depends on the concept one forms of the Earth body in space. The previous view, which gives the Earth body in the whole space the ratio 'one to infinity' or 'one to almost infinity' (conscious Feblausdruck!), should be completely excluded for all essential reasons of recent consideration. It is nothing but a superstition of pre-flood mathematics that the Earth body in the whole space is an atomic point. In serious competition, only such assumptions can arise that do not recognize the 40,000 km length of the Earth's equator as a completely vanishing size in relation to the space constant. And I would like to base my consideration here, without this being of decisive importance for mathematical purposes at first, on the assumption that I truly consider correct: that the Earth body in spherical space is the maximum sphere, that is, the sphere that halves the space and forms its lower half, while the surface, unequal in the spatial axes of the equator and the meridians, represents the absolute zero curvature, thus being the total plane of space that exhibits no curvature either downward or upward, but passes through as a symmetry and equatorial surface. Only those who are insufficiently educated in this point of science misunderstand that this concept is mathematically entirely possible. I now assume that the space constant is the equatorial distance of 90 degrees, thus 10,000 km. The quadrant of the meridian is about 37 km shorter. The space law has the property of the 'Earth line curve', and not of the mechanized circle, which is a faulty circle, as proven previously. Then, any chosen unit, such as a meter, is a specific part of the spatial size of 10,000 km.

Now, a reasonable consideration teaches that the achievement of a limit according to the logic of inequality is bound to smaller max values, the smaller the measurement intervals themselves are. If the path from a distance to a boundary leads to the boundary itself, then theoretically fewer numbers are needed the smaller the distance is. The size max is therefore dependent on the following formula based on the space constant and the chosen unit. If one sets the unit to 1 meter, then the space constant at 90 degrees under our assumption is equal to 107 meters, a 1 followed by 7 zeros. The formula for the distance 1/n meter then reads:

$$\text{Max} == \frac{10^7}{\cdot n}.$$

If a mathematical approach to a limit occurs from a distance of 10 cm, then the maximum number of the division process, which replaces the illogical and impossible 'infinity', is 1,000,000. Furthermore, according to this logic, there is no real larger number in this process, but the process in question transitions into the opposite (the arrow breaks through the wall, division becomes multiplication) if the matter is continued further. At a larger distance, the maximum number indicating the number of possible division acts also increases. At a distance of 10,000 km, max = 100,000,000,000,000. For 10,000 mm, the maximum number = 1, meaning no subdivision is possible without transitioning into another area. 1) In conclusion of this consideration, which thoroughly abolishes 'infinity', I note that if a tangent polygon increases its number along a circular line (which is known to be important for the derivation of z), the reduction of the tangent length in a finite manner leads to the minimal tangent, which is commonly called a 'point'. (However, the academic Xenocrates rightly stated that it is not a point, but a minimal segment.) If the process continues further, the point breaks through the circle's periphery and grows into the chord of an expanding chord polygon. In short: between the circumscribed triangle (or quadrilateral) and the inscribed triangle, there is a continuous process whose culmination point is the circle's periphery itself. (According to Köhler's plausible view, 4 must apply for the outer corner, and 3 for the inner corner.) It is therefore completely senseless to calculate 'to very many places', and it is also incorrect because the uniform process of extracting roots does not capture the uneven process of natural progression at all. With very many decimal places, one cannot be 'exact', but rather enters the realm of inaccuracies. The accuracies are limited to the middle world of experience, which is neither too large nor too small. Against the maxima and minima, there are no uniform processes, but only uneven processes that no calculation mechanism has accurately represented yet. And finally: the continued division of matter leads to minimal masses, and then further to electron tensions, i.e., energy.

The commercial trisection harmony.

Let there be a circle around M with radius MB. Take any point I on its periphery, as the figure shows. Extend the direction BM beyond M. With radius IM, draw the circle around 1. This intersects the line BM at F. Connect F with I and extend this line until it intersects with the circle's periphery at A. Draw the line AM. Then the angle AFB is exactly one third of the angle AMB, and the angle AMB is exactly three times the angle AFB. Proof: Draw a parallel through I to BF. This intersects the circle's periphery at the second point Gy. Draw the ray G, M. Draw the line IM. Then arc IM + 1 equals arc G, B, as the circular arc between parallels. The angle AIG is equal to AFB, as the opposite angle at parallels. This angle AIG is the peripheral angle in the circle, which is based on the arc.

1) What is thus indicated in units ant (millionths of mm) in wave theory lies already beyond the molecule and is in its character electronic energy.

AG stands. The central angle on the same arc is therefore twice as large. This is the angle AMG. If we denote the angle AFB with x, then

G1MB = x, because equal IMM +1 and IMM +1 = IFM+1. AMG = 2x, as the central angle to AIG1. Consequently, G, MB is half as large as AMG1, thus G, MB = 1/3 AMB. This means: If you rotate the central angle IMM __ 1 around its sine axis outward, so that M comes to lie on F, the angle is formed as the trisection angle of the corresponding angle in the opposite semicircle. Or: The outwardly folded central angle is the trisection angle of the counter-ordered central angle in the same circle. By rediscovering this theorem, which is as fundamental to geometry as the theorem of central and peripheral angles itself, architect Rudolf Kommer in Cologne has achieved a realization of classical significance.

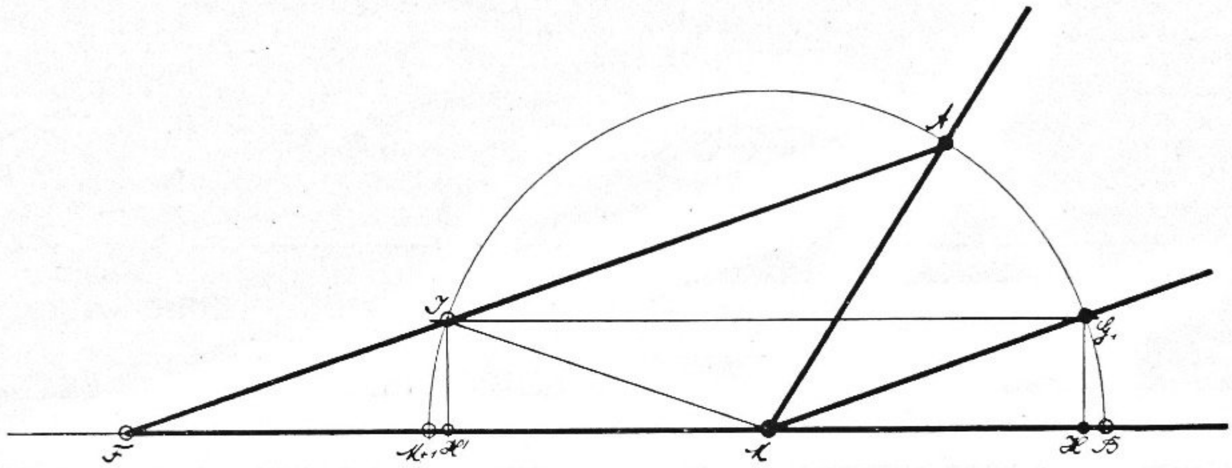

Figure 10.

First, it is stated without error that any arbitrary angle is only linked by lines and circles with its triple or with its third, and that this fact is completely independent of the special type or size of the angle. Rather, there is a seamless continuous progression through all values. When one angle arm is rotated, the assigned one rotates kinematically with it. (One could even add: kinematographically.)

1) In the path to this realization, L. L. Vincenot, Metz, in the 'Leçons de Geometrie Industrielle', Imprimerie de S. Lamort, 1844, pages 195-196, refers back to Archimedes, cf. Archimedes, Liber assumptorum Proposition 8, opera 2, p. 428-446. The rediscovery of the fact by Mr. Kommer gains the sense of a new discovery, as it is associated with the construction specification that must be absolutely correct according to the exact symmetry law, yet contains a micro-error that stands in quantitatively accurate relation to the geoid curve. The known statements of analytics about 'impossibility' are purely formalistic and do not recognize the geometric real basis for the small inconsistency: the inorganic nature of the regular circle. It is not merely a 'approximation construction', but it is the essentially correct construction, and the present micro-error proves its descent from the earth line curve through its quantity, just as the Kohler circle quadrature is only as possible with compass and ruler as the construction of the golden ratio - noting, however, that the transcendental number z cannot be considered here, but rather a larger circle flat number X by the flattening index. These are immensely new insights, and the known formalisms of analytics do not reach this depth by far (cf. for example, Encyclopedia of Mathematical Sciences III, 1. (2) page 795 ff. Leipzig, Teubner, 1914-31). The mathematician who wants to dismiss such 'approximation constructions' as already well-known should be pointed out from the outset to the concrete evidence that the earth line curve as a primary given resolves all paradoxes. And this is of epochal significance.

It is also possible to find the triple of any given angle using a compass and straightedge, as the points I and F can be constructed without difficulty. However, finding the trisection of the angle when angle AMB is given is still a problem. I will show: 1. That this problem is absolutely solved by the decision of the symmetry law, 2. That this geometrically absolutely correct solution results in a microscopic error when recalculating the angles, 3. That therefore the usual claim of analytical geometry, that the trisection of any angle is impossible using only a compass and straightedge, is indeed valid in the regular circle, 4. That this cannot overturn the symmetry law, which shows the typically and necessarily absolutely accurate construction without error, 5. That thus the analytical claim of impossibility and the nature of the regular circle are in agreement, 6. That both, the analytics and numerical world, as well as the regular circle, carry a micro-error against the organically absolutely correct mathematics.

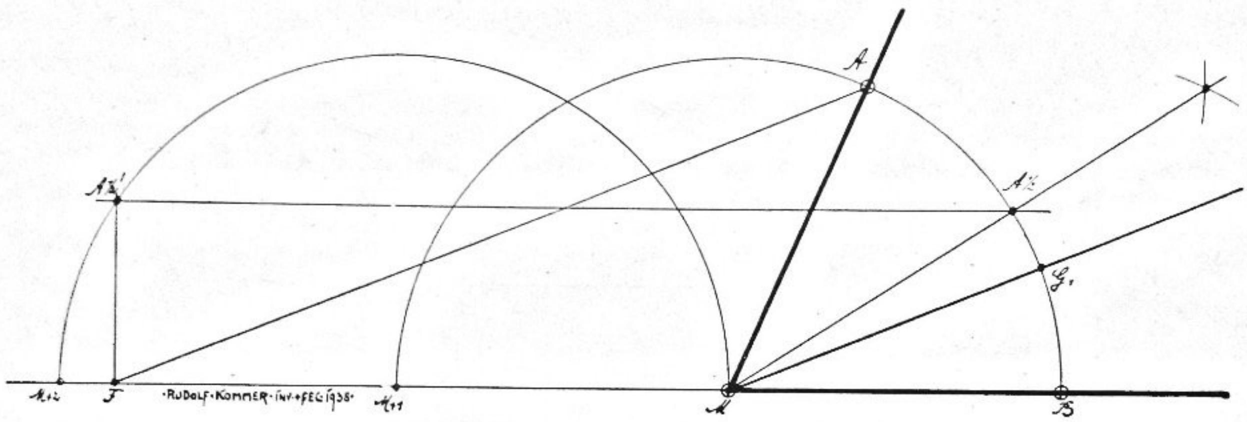

Figure 11.

Since the existence of this micro-error has already been logically derived, both for the regular circle and for the uniform logic of calculation methods, the discovery by Kommer here represents another example of the fact of micro-disturbances in the regular circle and in the uniform calculation system. That Mr. Kommer was the one who first noticed this fact, I mentioned in the relevant places.

By the way, he believes that it can also be shown empirically that the radius of a regular circle cannot be exactly divided 6 times as a Seline into the periphery, but that the line segment slightly extends beyond its starting point. When dividing the central angle of 3600 into sixths, circle chords are determined that are slightly smaller than the radius. This would, as anyone knowledgeable can see, imply that based on the statement of the experiment, the sum of angles in a triangle is already somewhat greater than 2 right angles in the usual large proportions of geometric drawings. My 'Polar Geometry' refrains from judgment on this but considers the case possible. That in larger scales, greater than the optical horizon, the angle sum in a triangle is greater than 2 right angles is completely certain. It remains to be seen whether Mr. Kommer is right when he thinks that this error can be detected as a micro-error already within the limits of ordinary experience. The Gaussian experiments in this regard were then to be controlled theoretically and practically. Targeting is not a very precise matter.

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I will first describe the construction found by Rudolf Kommer, through which point F is determined within the framework of Kommer's trisection harmony when angle AMB is given, and I will show that this construction is based on the absolute symmetry case among asymmetrical cases. One should draw a circle with radius r around the vertex M of the angle AMB to be trisected. Extend line BM beyond M to M + 2, which intersects the circle's perimeter at the second point M + 1. Also draw the circle with radius r around M + 1. Halve the arc AB at point A1/2 and draw a line parallel to MB through A1/2. This line intersects the second circle on the farther side at point A1/2'. From A1/2', drop a perpendicular to line M + 2 B. This perpendicular meets the baseline at point F. FA is then the direction of trisection. This means: if one draws a line parallel to FA through M, the ray, in figure MG1, divides the third part of angle AMB. (Figure 11.) The proof from the symmetry law proceeds as follows. (Figures 12-14.)

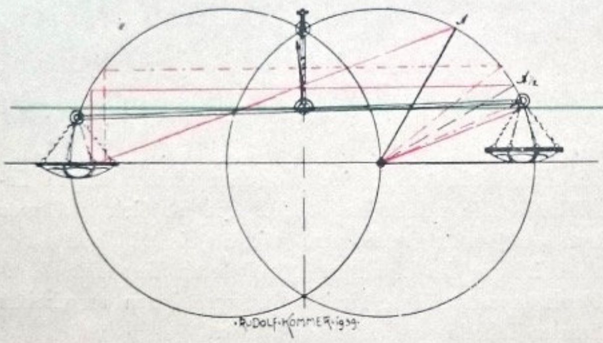

Figure 12.

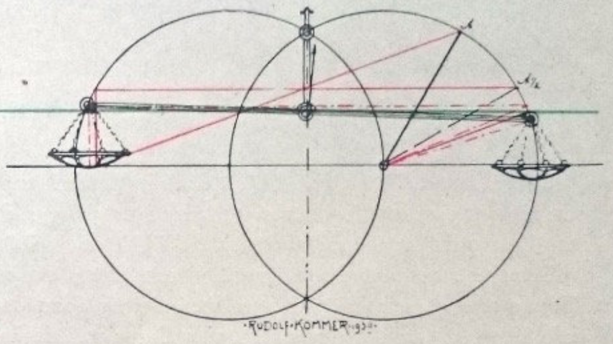

Figure 13.

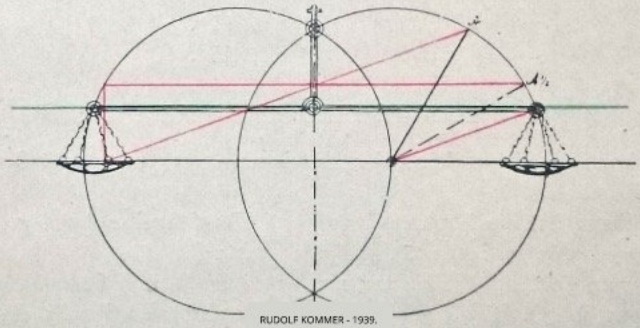

Figure 14.

According to the well-proven Archimedean theorem regarding the externally rotated central angle, the trisection vanishing point F is given when the line parallel to FA through M intersects the circle's perimeter, cutting off an arc BG1 that is equal to arc M + 1I, because only in this case, where IG runs parallel to M + 1 B, is the trisection established, according to the proof. (Figure 10.) If one were to choose a point above A1/2 on the arc as the starting point for the line, as shown in the figure, the 'balance' IG would tilt to the left, because the ray of the angle division would be steeper. Thus, instead of IM - 1, it would cut off a smaller arc on the left and instead of BG, a larger arc on the right, if G is determined by drawing the parallel through M to FA. The 'balance' would tilt to the other side if one chose a point on the arc below A1/2 as the starting point for the line. In that case, F would move to the left, the arc IM + 1 would become larger, and the arc BG would simultaneously become smaller. The 'balance' thus tilts to the right. Between these two tilts of the 'balance beam' IG, there is one and only one symmetry position. This symmetry position is, as proven, linked to the existence of the 'externally rotated central angle' and with the absolutely precise angle trisection.

It only remains to question how to achieve this symmetry position. It cannot be based on an approximate symmetrical measure. Only one and only one of all possible cases is considered as the case of symmetry acquisition: this is the case where the starting point of the line, A1/2, deviates neither upwards nor downwards from the center of the arc. The center is the symmetry point. This is connected with the symmetry position of the 'balance beam' IG. Thus, based on the symmetry law, the correct third division vanishing point F is obtained by halving the arc AB. Therefore, the simply posed task of dividing any given angle can be completely solved with a compass and straightedge as a requirement of the circular relationships themselves - and everything else remains a question of possible micro-disturbances in the regular circle and in analytics. The symmetry law, for example, according to the formula

$$1 = 1,$$

is more fundamental than all of mathematics in its entirety. What the symmetry law states is true.

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Even more astonishing is the fact that there is an antinomy between this clear requirement of the symmetry law and the calculation of the angles. The obtained angles are, in fact, too large by a micro amount, and the difference at 0 degrees = 0 and increases in a curved manner up to 90 degrees. Mr. Kommer has replaced the somewhat steep ray FA while maintaining the vanishing point F with the exact direction and calculated by how much the point A would then be shifted inward on its circle radius. It resulted in what can be seen from the following figure and the table below. AMB=900: 30° 22' 41" instead of 30°. =72°: 24° 10' 51" instead of 24°. =60°: 20° 6' 54" instead of 20°. =51°: 17° 3' 47" instead of 17°. =45°: 15° 2' 5" instead of 15°. =30°: 10° 0' 40" instead of 10°. =12°: 4°. Minimal difference.

From this, one can see a continuous law of deviation from the result that is absolutely to be expected based on the symmetry law. The curve drawn here has a flattening size of 1/68, thus a 4 times stronger flattening than the earth line curve. This can be explained exactly by two circumstances: The construction starts from point A1/2, and not from point A (as the calculation does, which leads to the table and figure just mentioned). The geoid displacement thus affects the halving of the whole angle, and it should therefore be considered only half as large for the respective whole angle. Furthermore, the geoid flattening of the circle around M is reflected in the circle around M + 1, which must also be flattened. Consequently, only half of the flattening should be considered for the displacement of point A1/2, which is reflected in A1/2'. Thus, for the actual displacement of point A1/2, only 1/4 of the flattening size 1/68 calculated by Kommer at point A is relevant, which is 1/272. However, this value corresponds best with the geoidal and with the value present in the Köhler quadrature section. The quantitative study will continue. It is important to note the result as a clear antinomy: The third division construction indicated by Rudolf Kommer, which must have been absolutely correct according to the symmetry law, shows a micro-error that is eliminated by replacing the regular circle with a geoid circle, as Rudolf Kommer himself was the first to suggest. It is fundamentally clear that the regular circle is a disturbed circle when examining circular harmonies. This was evident both in the calculation of the area of the circle, as well as in the quadrature chord of Köhler, and in the third division construction based on a fundamental and indisputably proven teaching axiom of Kommer-Archimedes. All evidence aligns and leads to the judgment: the ordinary circle with its all-sided equality, and the ordinary calculation methods with their general uniformity are not of nature.

Conforming human conceptual formations. Rather, the organic circle and the irregular number system are required, because only in this way does the law of symmetry remain intact. The demand for symmetry-polarity drives the understanding of acceleration-deceleration polarity in circular movements and in number progressions.

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The usual views of today's mathematics assert that the trisection of any arbitrary angle cannot be accomplished solely with a circle and a straight line, but that the following laws apply:

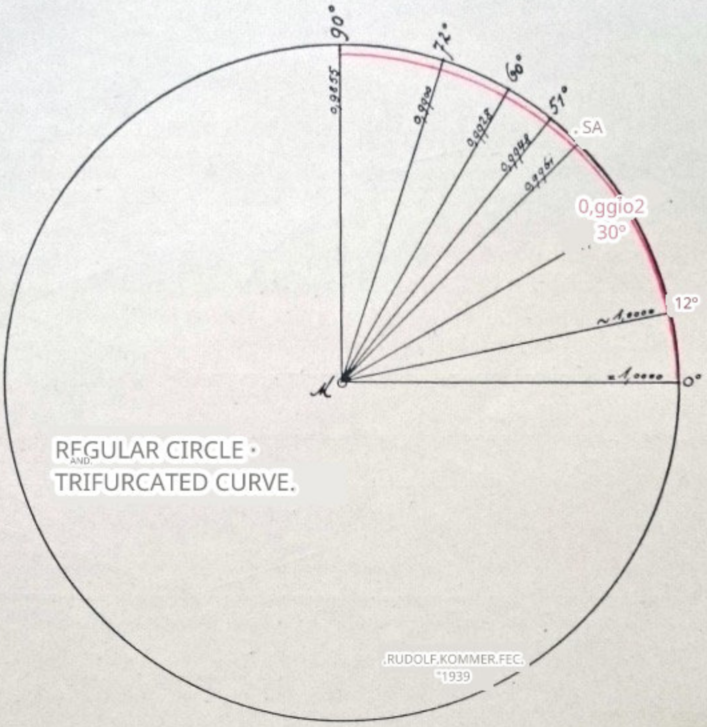

Figure 15.

A more complicated curve must be assumed. "Any curve is usable that is generally intersected by a straight line in 3 points or to which one can generally draw 3 tangents from a point. Such curves are not the only ones usable for the trisection construction, but the curves characterized above allow, among many others, the solution. The trisection, says mathematics, is a special problem of the 3rd degree, and a theorem from 1868 states: All problems of the 3rd degree can be solved solely with compass and straightedge if a completely drawn fundamental curve of 3rd order and additionally a square for the metric problems is given." However, this very learned statement has a huge gap due to the fact that in circular harmony itself, all angles with their exact trisection angles and all angles with their exact triple angles are merely linked by straight lines and circles, which is clearly proven on page 29. Nothing is assumed except that Euclidean geometry holds true for parallels and in the theorem of the central and peripheral angle. And secondly, it follows from the law of symmetry just as clearly that the trisection angle for any given angle can also be constructed with compass and straightedge on this basis (see pages 30-31), provided that the only condition allowed is that the regular circle, which the previous mathematics exclusively spoke of, is a circle that is consistent with the law of symmetry. This is, however, not the case, and therein lies one of the most significant and consequential discoveries in the history of mathematics since antiquity. It is doubly interesting that the discoverer is an architect.

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Unfortunately, it is not possible to even hint at the full richness of the circular harmony discovered by Kommer in this short brochure. Its author will publish it separately. However, so that at least one of the relationships can be vividly considered, here is a drawing that shows the importance of the circle around I with IF -IM = r. The diameter from F over I intersects the periphery at a point L, which is vertically above M. Mr. Kommer has elaborated these relationships with an astonishing number of details and legal findings. If the leg AM of the angle AMB rotates from 0 degrees to 360 degrees in the circle, the points F, I and L go through special laws. In this logical-philosophical
In this fundamental work, it must be sufficient to highlight the crucial points.

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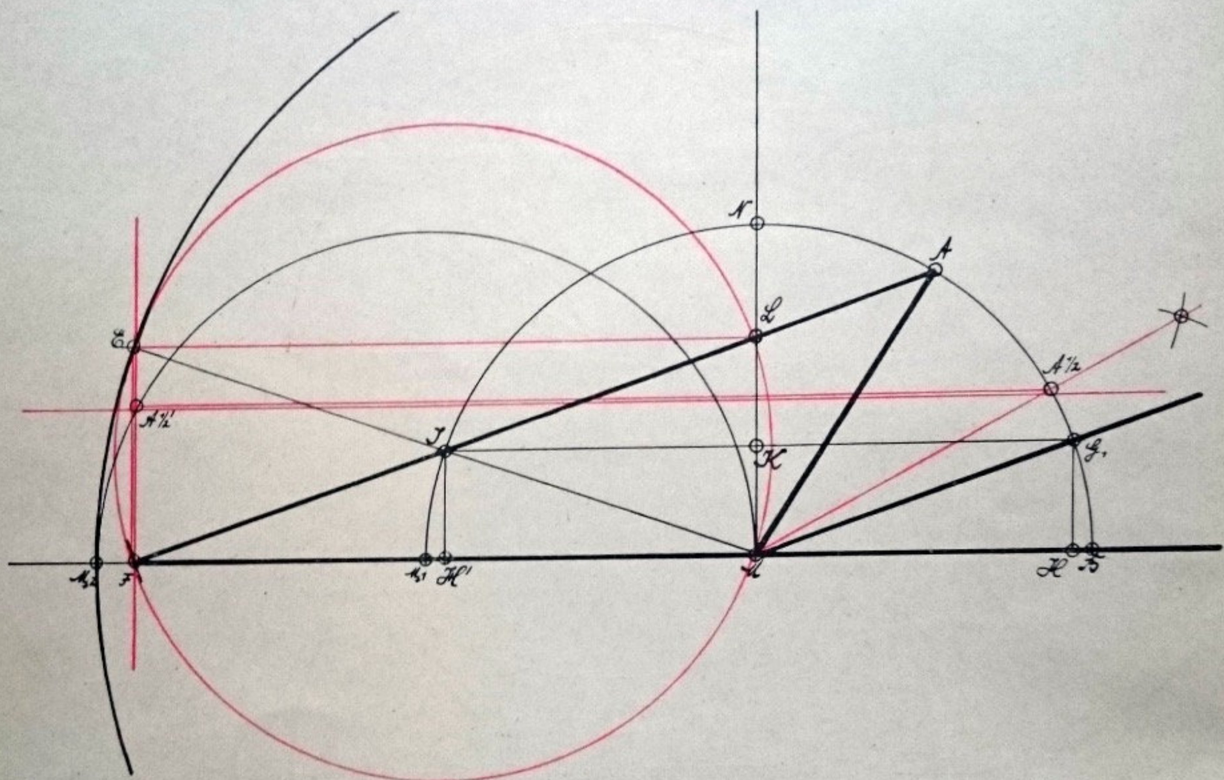

Figure 16.

Geometry and Cosmos.

Careful measurement and calculation of geometric relationships, of which Köhler's and Kommer's have been discussed here, show that the Earth's line curve is not a random curve that would have come about through arbitrary centrifugal forces in the course of cosmogony, which could just as easily have been different, just as the obliquity of the ecliptic could have been different - according to the opinion of those who only have a concept of chance from the "Harmonices Mundi". The so-called "flattening" of the Earth, or more correctly, the inequality of the spatial axes, is something derived in the laboratory of mathematical calculations. It is in the nature of space that it must have the polaristic inequality of the axes with the specific amount of around 1/270. It cannot be otherwise. The numbers show it. Our idea of a regular circle cannot occur in nature because it is a levelling idea, which introduces an equal radius everywhere on the circle (because the compass is such a convenient tool.

Unfortunately, it is not possible to even hint at the entire wealth of circular harmony discovered by Kommer in this short brochure. Its author will publish it separately. However, in order for at least one of the relationships to be considered visually, the figure is drawn here, which allows the importance of the circle around I with IF = IM = r to be recognized. The diameter from F through I intersects the periphery at a point L, which is directly above M. Mr. Kommer has elaborated these relationships with astonishing detail and legal insights. As the leg AM of the angle AMB rotates from 0 degrees to 360 degrees in the circle, the points F, I, and L undergo special laws. In this logically-philosophical foundational work, the emphasis on the decisive aspects must suffice.

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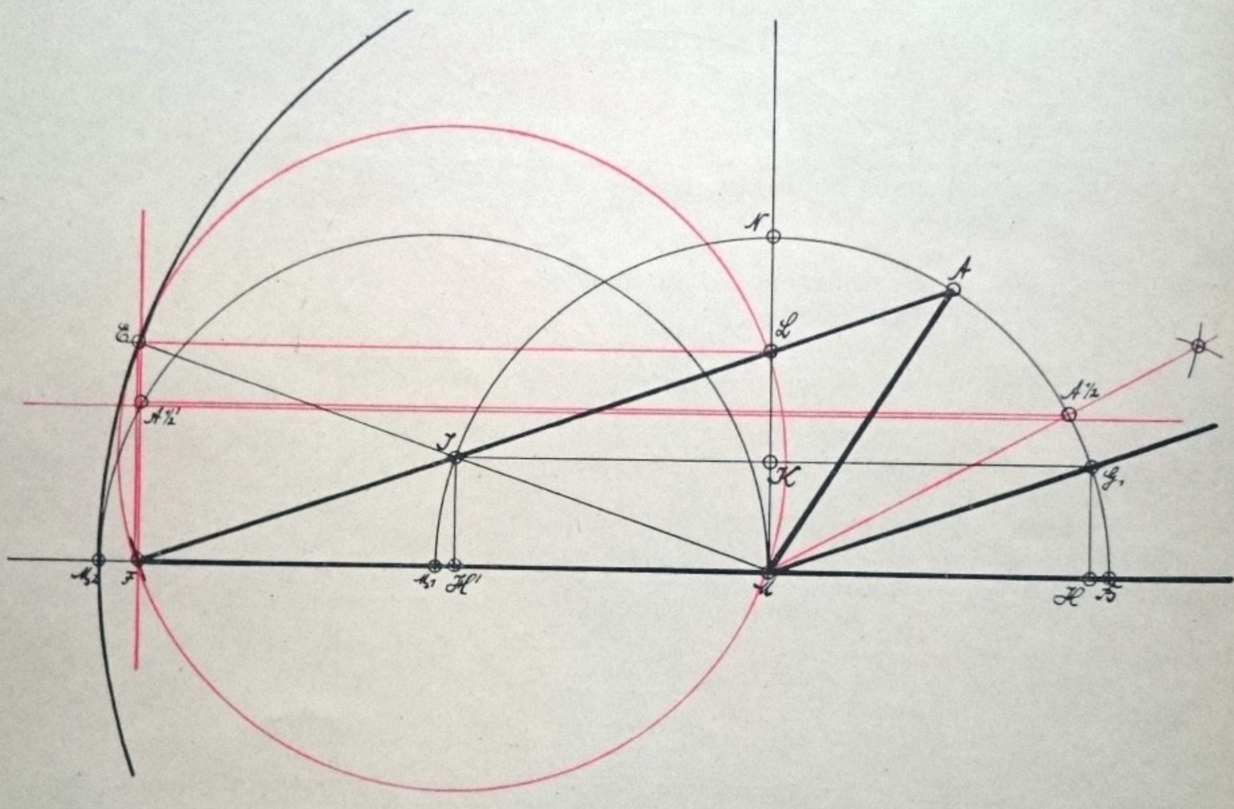

Figure 16.

Geometry and Cosmos.

Through careful measurement and calculation of geometric relationships, of which the Köhler and Kommer cases were treated here, it follows that the earth line curve is not a random curve that might have arisen from arbitrary centrifugal forces during cosmogony, which could just as well have been different, just as the obliquity of the ecliptic could have been different - if it depended on the opinion of those who have only a random concept of the 'Harmonices Mundi.' The so-called 'flattening' of the Earth, correctly stated, the inequality of the spatial axes, is rather something derived in the laboratory of mathematical calculations. It is inherent in the nature of space that it must have the polaristic inequality of the axes with a specific amount of around 1/270. It cannot be otherwise. The numbers show it. Our idea of a regular circle cannot occur in nature because it is a leveling idea that introduces the same radius everywhere on the circle (because the compass is such a convenient tool.

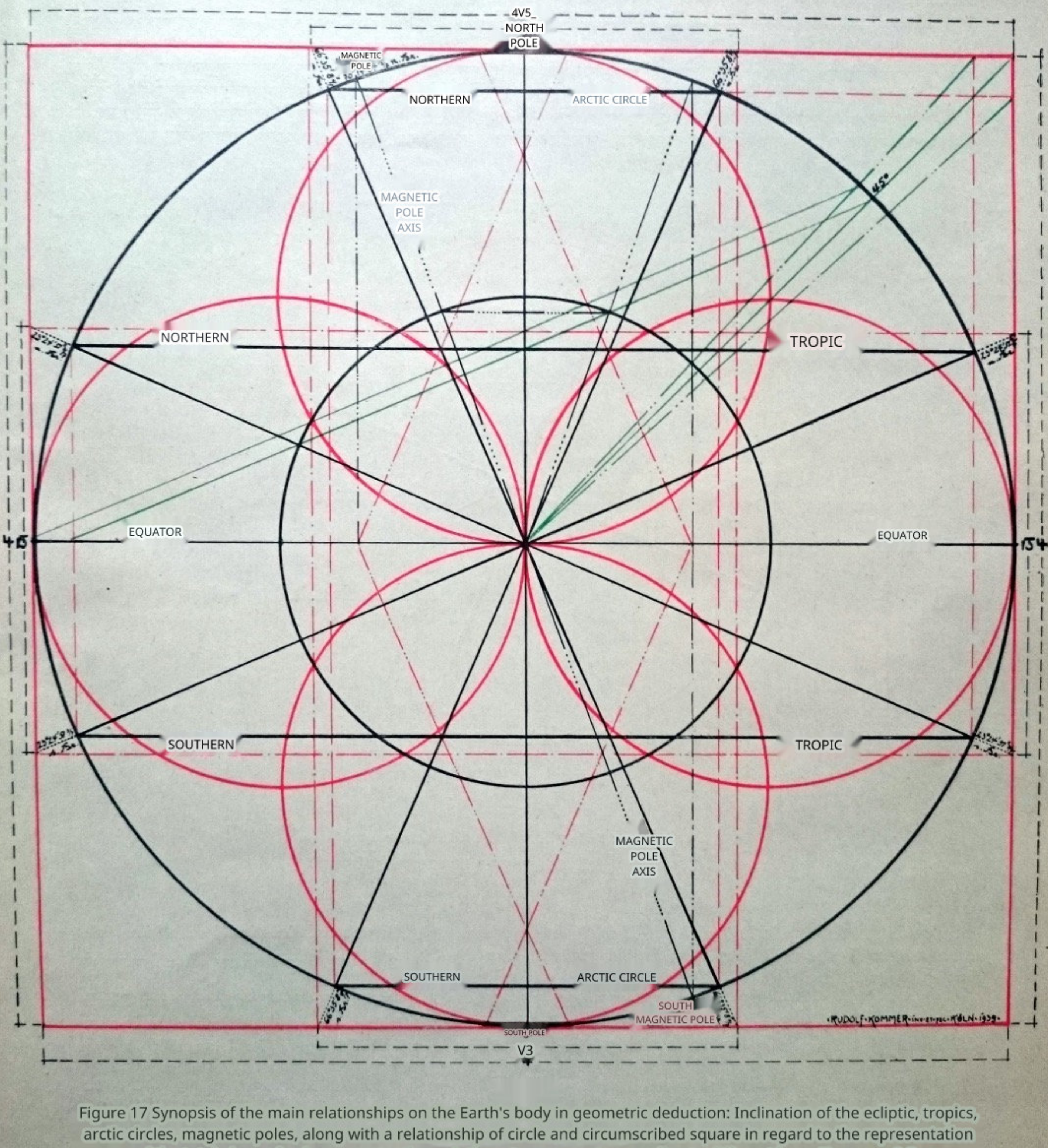

Figure 17 Synopsis of the main relationships on the Earth's body in geometric deduction: Inclination of the ecliptic, tropics, arctic circles, magnetic poles, along with a relationship of circle and circumscribed square in regard to the representation of the total plane of polar geometry through these two concepts according to different laws. (See page 24).

The medium radius only appears as a transition between a 'somewhat too large' and a 'somewhat too small' formation, as I have shown, while in the nature of geometric necessities. In technology, 'organic circles' cannot be used; everything must be standardized. The flattening of the Earth, as one says in connection with the reduction globe, is a necessary consequence in quality and quantity of the laws of geometric necessity, and for this reason, the Earth's surface is exactly proven as the spatial surface that embodies the essence of space and measures space itself without curvature.

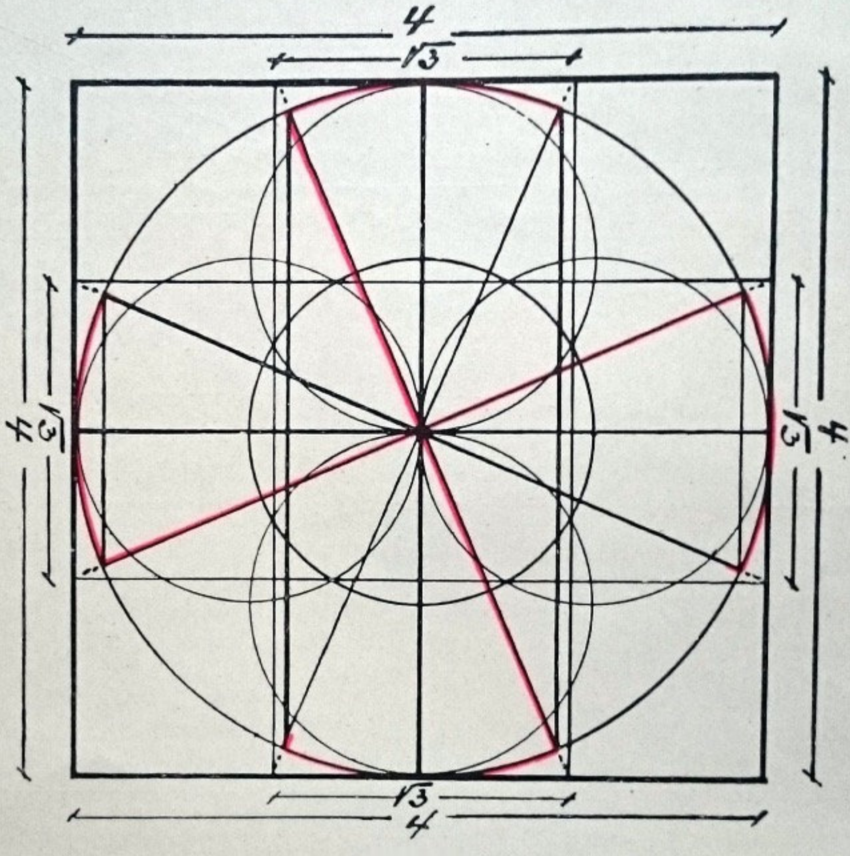

Figure 18. The solar law of the tropics and the solar wheel (swastika cross) from ancient Peru, ancient Mexico, ancient China, Tibet, and Chaldea in congruent alignment.

This is what I have advocated since 1914 ('The Earth as Total Plane'). See 'Man and Earth in the Cosmos' published by Richard Keutel in Lahr (Baden), 'Cosmological Letters', Bern, Paul Haupt, 1931, 'The Cosmology of the Great Earth in Total Space', Leipzig, Otto Hillmann, 1939. But even more: the obliquity of the ecliptic (as it is expressed), that is, the latitude of the tropics of the annual solar path, has been derived purely geometrically by Rudolf Kommer from a circle harmony: 'Tangent & = 13 : 4.' In numbers: The 'obliquity of the ecliptic' was 23° 27' 8.26'' in the year 1900 and decreases annually, so a mean value can be assumed that will occur after various years. The aforementioned geometric formula yields this normal value, regularly calculated, as 23° 24' 47.6''. This angle is fixed in the geometric circle harmony in the simplest way, as the figure shows. In the year 2200, it will match exactly.

One can see in these figures 17-18 how the so-called 'obliquity of the ecliptic', the distance of the tropics from the equator, is established in circular harmony. The radius of the small circles is 1, and the radius of the large circle is 2. The '13' is the common chord of two small circles, whose centers have the distance of the radius. The tropics and polar circles on Earth are defined with great accuracy in circular harmony through these relationships. It was only through this brilliant discovery by architect Rudolf Kommer that I truly understood the tropics. Until now, they were somewhat misunderstood to me, and the same goes for the cleverest mathematicians and astronomers. 'Incidentally', Mr. Kommer finds that an ancient symbol of humanity, the so-called swastika cross, which can be found in ancient Peru, ancient Mexico, ancient China, Tibet, and Chaldea, accurately represents the obliquity of the ecliptic and the distance of the polar circles from the poles, for which the drawing is the proof. It should be clear that modern geometric understanding rediscovers the buried knowledge of the oldest cultures. I consider it entirely impossible that a thinking person could regard this derivation of the 'obliquity of the ecliptic' in its geometric necessity as unimportant. However, this proves that the laws of geometry, in a deep sense, are the laws of the Earth and astronomy, - that is, the Earth belongs to space as something essential, and not as a 'speck of dust'. What Kepler sought, the 'Harmonices Mundi', seems to be found here quite clearly in one aspect. The connection of this Kommerian discovery with the previously mentioned Köhlerian viewpoints of 'radial' and 'peripheral' tensions is also interesting. The 'peripheral' tension 'V3' determines, together with the 'radial' tension, which is present in the square around the circle with double radius, the most important angle of all astronomy: the 'obliquity of the ecliptic'. - In figure 17, one can further see that the Kommerian tripling ray of the ecliptic center angle intersects the outer circle at an angle of 45 degrees (initially disregarding the micro-error, which is completely eliminated by the geoid curve), and that this ray determines the magnetic pole axis. For Mr. Kommer has also geometrically derived the magnetic poles here, and even the movements of the magnetic poles and the geographical poles are enclosed in a specific geometric area. (The numerical data in textbooks are very variable here.) Through this synopsis of the most important facts about the Earth body in geometric deduction, it seems to me that something has been created by Mr. Architect Rudolf Kommer that has immense significance for understanding. The relationships between the great circle and the circumscribed square are particularly interesting in terrestrial terms, as the square (according to Köhler's polar consideration) is the purely static representation of the same geometric essence that exists in the circle as something static-dynamic, and that has its purely dynamic, purely rotational correspondence in the maximum circle or maximum sphere of the geoid. In this respect, Mr. Kommer is right when he sees in the square and in the great circle something that relates to the essence of the Earth body and the Earth's surface, in the sense that it concerns two different forms of the lawful representation of the terrestrial original principle. 1) In short: The study of pure geometry reveals to us the most obvious secrets of the Earth body as natural necessities. This body is therefore nothing accidental and speck-like in space, but the bearer of the law of space itself. Thus, my theory of the Earth, advocated since 1914, has received a tremendous confirmation that weighs more than dozens of intricacies concerning the recently discovered asteroids or faintest fixed stars. This is a monumental proof of the correctness of the doctrine I represent regarding the maximal Earth in polar geometric space and a strong refutation of all opponents of such a reasonable worldview. One should particularly note how simply the obliquity of the ecliptic (23° 24' 51") is linked with the angle of 45°, and how it is constructively established when one knows the circle radius. One should draw the circle with half the radius above the midpoint of the radius, and the equally sized circle around the center point. Through the intersection point of the two circles, draw the parallel to the equatorial diameter and bring this to the intersection with the perpendicular erected at the endpoint of the radius. Connect this intersection point with the center point, and thus you have the obliquity of the ecliptic, that angle which until now could not be constructed or derived, but only memorized. It decreases by almost 1/2" each year, reaching the mathematical normal value in the year 2200. Today it is still almost 2' larger. This is because, just like with the magnetic poles and everything in the world, nature is not stable, but oscillates around ideal normal values. Nothing is dead, everything is alive, and geometry is the normal harmony of the living cosmos.

1) See also 'Circle and Square on the Total Plane' page 24.

The theory of Copernicus is represented in the system of the maximal earth in spherical space as follows. It remains mathematically untouched, but the annual movement of the earth body around the axis of the ecliptic is not attributed to the motion of a small body in boundless space, but to the rotational movement of the maximal earth, which is the lower half of spherical space, around the axis of the ecliptic. Each observatory on the earth's surface has, on this occasion, the movement in space that occurs in the Copernican equations for planetary orbits, with high-speed accuracy and with exact identity of all observed angles and times at the celestial bodies. However, the earth body as a whole is not in any movement. Rather, the whole rests while the points on it move. This is the truth, which is even directly proven in nature by a great fact.

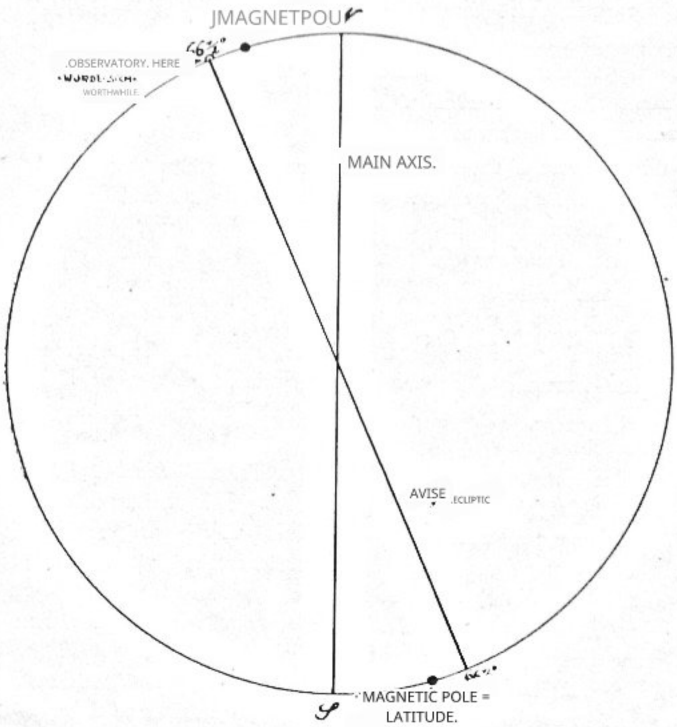

Figure 19.

The position of the magnetic poles, namely at around 73-74 degrees latitude, can only be understood if the earth body, in addition to the daily rotation occurring around the north-south axis, also has a second rotation that occurs around an axis beyond 73-74 degrees. This, however, is the annual rotation of the earth around the axis of the ecliptic, which meets the earth's surface at a latitude of approximately 66.5 degrees. It should also be derivable from the commonality of these two rotations that the magnetic poles, which are the resultants, lie at these (variable) locations. The fundamental law of motion theory in astronomy is that of the relationship of the moving points, whether the points have their own motion or whether they are merely subjected to the general and fundamental main rotation between the two halves of space. If the points have their own motion, then it is entirely 1) His main work, 'De revolutionibus orbium coelestium', was published in 1543. It is dedicated to Pope Paul III. Shortly after Columbus first opened humanity's view over the vast, wide earth, Copernicus felt compelled for purely mathematical reasons to make the earth that moving body in space that has since been conceived, whereby the tiny dust-like nature of the earth as a whole became increasingly clear. Had Copernicus based his correct mathematical thesis of the annual movement of the earth body on the doctrine of the annual rotation of the great earth around the axis of the ecliptic, instead of on the nihilistic idea of a moving planet, a severe dissonance between human knowledge and knowledge of the cosmos would have been spared in the history of thought. 2) See Kommer's derivation in Figure 17.

Indifferent whether they are planets or points on the Earth's surface or wandering core formations within the liquid Earth's magma. It is also indifferent whether it is an ocean liner crossing the Atlantic Ocean or merely a theoretical axis in the mathematical structure of the Earth. It does not matter whether it concerns the annual parallax of a fixed star or the appearance of a comet: everywhere the law of the relationship of points is the general scientific law of perception. One thing, however, is fundamentally wrong: that one thinks as before, namely that 'the Earth' is an astronomical-mathematical collective term - a collection of a thousand different points as a meaningful correspondence to the collection of world systems that scatter in space if the deceived of Copernicanism were right. Rather, in a twentieth-century astronomy, the concept of 'the Earth' can no more play a mathematical role than the concept of 'the sky.' It is completely arbitrary and insane to obscure and distort the North Pole and the center of the Earth, a moving ocean liner and the city of Leipzig, the axis of the ecliptic and the magnetic pole at Boothia Felix, a wandering organ part of the Earth's interior and the Earth's equator simply by an astronomical nonsensical term 'The Earth.' 'The Earth' moves on! 'The Earth' looks like a cloud! 'The Earth' is at the center of the world or beside it! The observer on 'The Earth' sees around him the astronomical structure, and when one thinks of right ascension and declination, fixed star cosmos and comet orbits, one always thinks of 'The Earth' as a point in the center of his 'thinking.' This degradation of a cosmic totality of points to a single point is the actual cause of the entire falsity of all previous cosmology. Without my polar geometric conception of the Earth as a maximal sphere, even good attempts to renew the worldview will sooner or later have to land in absurdity. It is therefore better to befriend something that initially seems a bit more difficult because it alone has the advantage of being completely correct until the end. Among good attempts to abolish the Copernican worldview in the 20th century, I first mention that of Madame Pierrel, an astronomer, currently elderly in Le Plessis-Trévise (Seine-et-Oise, France), 4 Avenue du Château, alive. 1) She has recognized that the annual rotation of the Earth around the axis of the ecliptic occurs without the Earth moving around the Sun. From her writings, I mention 'Lettre Ouverte à M. E. Barthel' (Cluny 1933) and 'Refutation du Système de Copernic' (Cluny 1939, Imp. Ch. Dutrion). Also, the cosmologist Johannes Schlaf, known as a poet in Weimar, has maintained the position that the Earth only has rotational movements, no translational movements. See 'Kosmos und kosmischer Umlauf,' Literary Institute Weimar, Hilmar Doetsch, 1927. It is strange that Schlaf does not mention Barthel's efforts, which he had already discussed in 1914, probably because they are too difficult! But I call out to him and his many like-minded individuals that a difficult matter can be grasped through learning, while a false matter permanently damages understanding. It is false with Madame Pierrel and with Schlaf that both do not recognize the Earth as a maximal sphere in polar geometric space. Pierrel lets the 'planet' Earth rotate as a point within itself (which seems absurd from the outset, as Copernicus rightly states in his main work), and Johannes Schlaf would like to have something to do with the holistic space (after Barthel has worked so much on it), but he lacks the right lever for this. His Earth lies curved in the 'middle' of the world like in Ptolemy. However, we can never go back there. The 'Hollow World Theory' of the universe by Koresh and Morrow in America and Neupert and Lang in Germany eliminates the infinity above, but it places the Earth like a tin shell filled with stars in an infinite space below. It throws out the devil to let in Beelzebub. This childishness eliminates my polar geometry of space with the cycle in which the Earth is the maximal sphere. (See Figure 20.) The gentlemen of the Hollow World Theory are aware of my better teaching of the Earth as a fundamental body in spherical space, but they deliberately conceal my existence just as the Copernicans do, probably because they correctly feel that the better is the enemy of the good. I clarified the relationship in the 'Astralen Warte' January and March 1937 (Uranus-Verlag Memmingen). The fact is that this American theory, which is being imitated in Germany, already has its adherents all over the world, and that it carries a good element within itself: namely, that the upper part of space, which astronomers present as an endless waste, is a spherical totality. Based on this correct element, the hollow sphere theory will also secure further interest. And as a pacemaker for the correct theory, according to which the Earth is the lower part, the sky the upper part of the total space, can the

1) She died at the age of 90 on July 3, 1939. Honor her life struggle against the pack of Copernicanism!

The mere consideration of the upper half in the hollow sphere theory has quite a useful psychological significance. May the trivial nonsense of the metal shell not take root in people's minds more strongly than the true polar doctrine of the cycle of space - to which the academics all contribute by artificially trying to stifle my good theory. There is no question that the system of official astronomy is dismissed in the culture of humanity; the only question is how. And thus, the doctrine of spherical space with the maximal earth is far more accurate than the mere monopolarity of the metal shell earth without a body center. The fixed stars are secondary effects of solar radiation in the crystal of the real spatial body. Each fixed star has its own color, i.e., its own spectrum, depending on the nature of its formation in the space crystal. The fixed stars are not reflected sunlight, but punctualized (just as a human can be understood as a punctualized secondary representation of the creative one Divine). The Milky Way cannot be explained in a (completely incomprehensible) 'perspective' manner, as in Kant's 'General Natural History and Theory of the Heavens', but as a holding belt of the space crystal. One should not think of the ether body of space in rigid rest, but in a movement of the most varied forms. For example, each spiral nebula is explained by a rotational movement in the ether at those points, and the radiation that falls in is spirally ejected. One can clarify these facts in the carrying ether with the utmost convenience by rotating black coffee in a cup with a spoon and letting a small stream of milk fall into this rotating medium. A spiral appearance is created, similar to that of a spiral nebula of the fixed stars. It is important here that the rotational state of the medium (in space: of the ether) 1) explains the appearance brilliantly, without needing to invent novels about 'explosions' in the 'world systems'. The ether body of space is a deeper physical reality than all individual facts in this ether body. The slow displacement of the viewpoint, which is referred to in the fragmentation system of the world as the 'movement of the solar system through the space of the fixed stars in the direction of the constellation of Hercules', is a result of the third relative rotation between the earth body and the astronomical world space, namely the very slow 'displacement of the earth axis', which causes the 'precession of the vernal point', completing 360 degrees in about 26,000 years. This slow displacement or rotation, which is the cause of the sinking of continents and islands and for the reformation of solid land, for the geologically proven radical climate changes at various points on the earth's surface, and thus: for the entire processes of world history - this third rotation is also seen in the slow change of the viewpoint in the fixed star sky. The novas (new fixed stars) and the variable fixed stars are to be understood from the slow change of magnetism in the space crystal. The double stars, spiral nebulae, unresolved light spots, as well as the zodiacal light and the northern lights - are all functions of stable or variable nature of the single great fundamental fact of solar radiation through the space crystal. Yes, it has already been stated from two or three sides with good evidence that it has been possible to understand the constellations of the entire fixed star sky as the result of geometrically necessary line intersections - thereby also eliminating the misunderstood 'chance' of the matter. The theory of spectra, which is indeed related to the fixed star claims, has been wrong since Newton because it has carelessly overlooked the fact of the congruence of complementary and displacement-symmetric color wedges at the prismatic basic phenomenon, which Goethe already fought against. It has been overlooked that the continuous spectrum, whether it is the green or the equally legitimate purple spectrum, arises from an inertia in the ether, whereby a scattering of light elements occurs during refraction. In this process, positive and negative (bright and darker) light paths on both sides of the beam bundle combine in the same quantitative ratios, but with reciprocal positioning or function, and the physical complementary colors are the result. One can physically neutralize two complementary colors to colorless light. The physicists have maintained since the Goethe dispute from the Munich struggles of 1917 to the present (Prof. Dr. Gebreke from the Physical-Technical Reich Institute) that we representatives of complementary physics confuse 'darkness', which as energy is nothing, with a negative energy element, which as such is something. 2)

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1) 'Cartesian vortices'. 3) It seems rather that the physicists are making a confusion when they simply refer to the contrast direction of the cold machines (invented by a practitioner!) as 'absence of heat'. These theories of physicists from the braid age simply belong on the pillory in the 20th century. Cf. L.-C.-E. Vial, La Chaleur et le Froid. Paris, Michelel, 1884-1885.

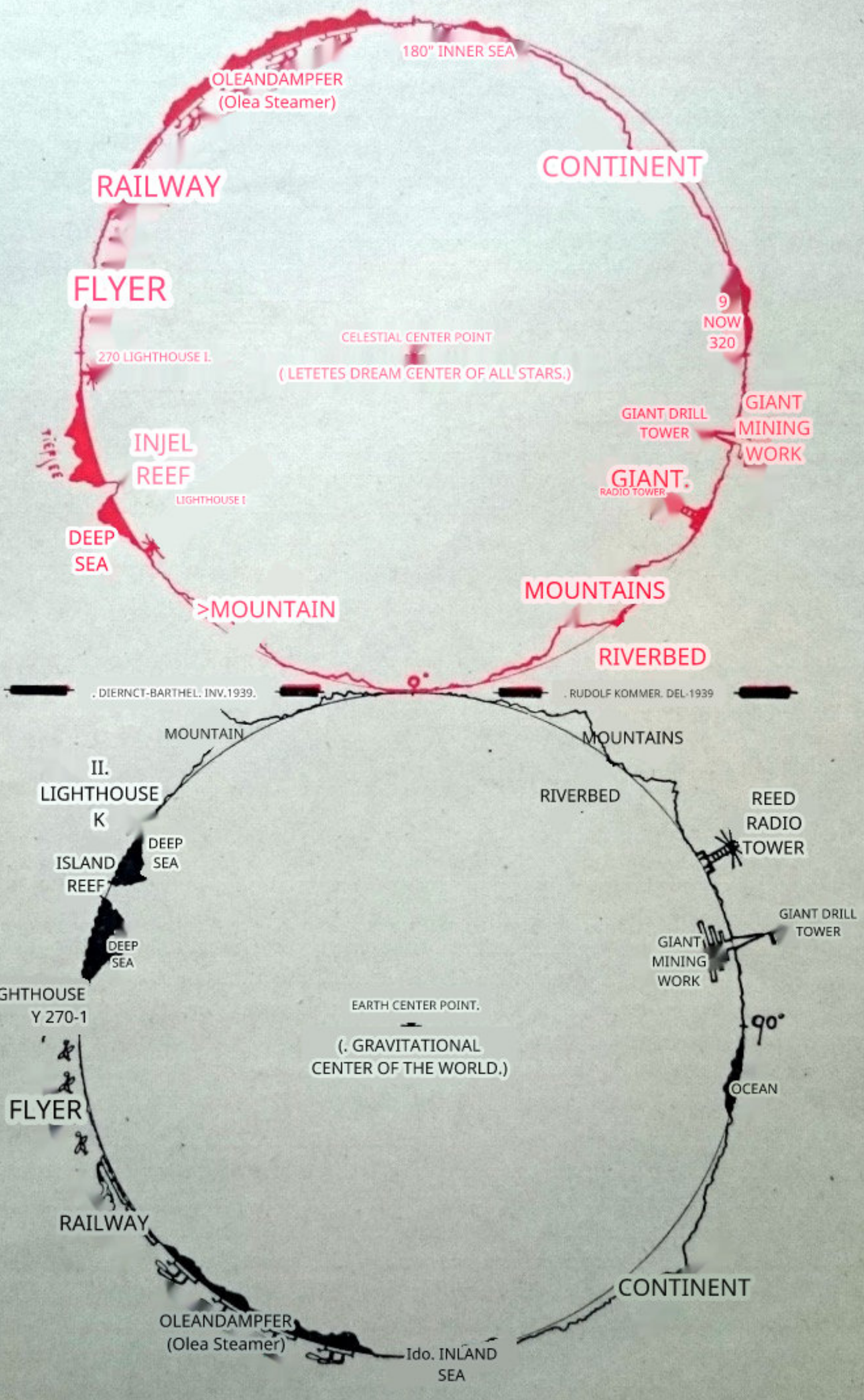
But we simply ask the opponents to conduct a small experiment with black ink, which will likely enlighten them about the inadequacy of their thinking. One drops a drop of opaque black ink into a glass of water. Then the negative element of darkness enters the overall result in a dilution that makes it a physical entity, specifically a negatively charged entity. The solution is a mechanically additive tension of light and dark. However, so far, complementary colors have been banished from the vibrational structures of physics and merely 'pushed aside' for simplicity, even though every color photograph of the sky shows that even the non-materially existing objective appearance has objective colors. Physicists rely on the completely outdated and false theories of knowledge of a Locke or Schopenhauer and thus neglect the study of complementary relationships in logarithms and ether vibrations. I have intervened here and have proven in the work 'Complementary Wave Mechanics: A Justification of Goethe's Theory of Colors' that two ray paths in the ether couple into complementary vibrations under certain circumstances, which have the property of neutralizing each other into a simple sine wave. However, this greatest advancement in theoretical optics since Fresnel has yet to be acknowledged. It is securely placed (Yearbook 1938 of the Alsace-Lorraine Scientific Society in Strasbourg, pages 240-251), with a table of 12 complementary vibration forms of an ether point. For fixed star astronomy, these matters are also important, as one sees both the spectra themselves, as well as the line spectra, and the redshift of the spectral lines in a completely new light. I cannot develop my entire theory of the maximal earth in spherical space here. I refer to the books 'Man and Earth in the Cosmos' (Richard Keutel Publishing in Lahr (Baden) 1939), 'Cosmological Letters' (Bern, Paul Haupt, 1931), and 'Introduction to Polar Geometry' (Leipzig, Noske, 1932, 2nd edition). The objections of the representatives of the old are unfounded. One cannot conclude the correctness of the old system from its self-consistency. Every distorted map agrees with its own law, and in every system, one can find truths and assert falsehoods that are not verified. One must distinguish the secure facts of observation, which are angles and times. These remain untouched. The distances and masses, on the other hand, are mere calculated fictions that change from system to system. It is foolish to say that the 'Newtonian law of gravitation' 'proves' that the fragmentation system of the world is correct. One has only to adjust the fictional data to a new system, and the attractive forces agree. No one knows anything about the mass of the Earth. The Earth's interior most likely does not consist of heavy metal, but of hot salt solutions under high pressure, which could have created the Earth's crust and could also cause hot springs, which cannot exactly be claimed for liquid iron! Unfortunately, some astronomers today do not even have the good will to allow for reflection on the fundamental problems. An astronomical journal informed me that it is bound to Copernicanism and cannot accept new thoughts. A young astronomer in Bonn wrote to me that he 'is not interested' in the question of whether the Earth is a speck or a maximal sphere in the universe. From such and many other details, a conclusion about the mindset is clearly necessary. Copernicus himself did not believe in his worldview, as is clearly evident from his letter to the Pope. It is a mathematical calculation rule, of which he does not want to claim that it must therefore be 'true' in the worldview he attached to it. However, the mathematics of Copernicus is much better fulfilled by the double rotation of the maximal sphere than by the chimera of the movement of a small Earth around the sun at an average distance of 150 million kilometers. Apart from the mathematical basis, there is no reason in favor of the Copernican worldview, but only a multitude of significant counterarguments. Thus, one does not see what legitimate interest would be protected if the laziness and arrogance of habit defend Copernicanism like another biblical dogma. On the contrary, the malicious behavior of many representatives of Copernicanism makes it necessary for me to write the clear and simple statement: In the twentieth century, Copernicanism, which was initially merely a calculation rule, has become a visual delusion, as no mathematician sees the necessity of this hypothesis. If one thinks of the Earth body in spherical space continuously enlarged from point size to maximal sphere, all legal relationships change lawfully and clearly. The system does not become more complicated. It simply becomes more correct, that is all.

1) To this, 'The Cosmology of the Great Earth in Total Space' (Leipzig, Hillmann, 1939).

Either one continues to believe in the theory of the world's fragmentation into atomic points, eternally separated by light-year distances, - then one must forgo a reasonable theory of humanity and world history. On such a ridiculous 'speck' of Earth, only absolutely trivial things could happen, corresponding to the principle of nature: 'The structure reveals the essence.' Or one takes the great approaches that have existed since Plato for a unified understanding of humanity and world history and connects them with a new cosmology that has increasingly entered the realm of scientific possibility for about 50 years (Riemann's habilitation lecture 1854), and which has been represented by the author of this brochure for more than 25 years (1914: 'The Earth as a Total Plane'). The reasonable part of humanity will gladly forgo the fragmented world of atomic worlds with 'exorbitant' distances, leaving the tears in the eye to the wounded egoism of an outdated system that makes a unified worldview of humanity impossible. Tycho de Brahe and other wise minds from then to Goethe and Hegel, Strindberg and Joh. Schlaf had good judgment, who did not want to believe in the 'mathematical proof' of a system of grinning nonsense. They were not the less intelligent, but the smarter ones. Some of them understand more mathematics than a multitude of the followers of Copernicanism combined. It must be recognized in the 20th century that Copernicanism is not the banner of the future, but the stale habitual result of the past. Under its banner, the lives of the best men of the spiritual life are today destroyed, as Robert Mayer was destroyed, who formulated the law of conservation of energy, Semmelweis, who discovered the childbed fever bacillus and thus the cure for a deadly fever, and many of the few who are called to enlighten this gloomy humanity about the harmonies of the world. Today, Copernicanism has become the banner of backwardness. While the Copernican planetary mathematics must be acknowledged, the Copernican worldview must be eliminated from it. This is possible today based on my theory of the maximal Earth in spherical space.

How little the judgment of previous natural science meets the simplest requirements of natural correctness and care can also be seen from the repeatedly asserted claim since Galileo that the pressure of a mass downwards has nothing to do with its tendency to fall and its falling acceleration. A dozen flimsy arguments are presented to students as 'proofs' for this claim against nature (cf. my magazine 'Antaus' issue 8). Any dissenting opinion is suppressed in its infancy as heresy. It is pretended that one is searching in the vast physical literature for an experimental proof of the Galilean claim [masses of large weight quotient and large weight difference, thus equally sized spheres of 20 grams and 50 kilograms fall at least 50 meters in a vacuum, where a precision recording is located on the ground that measures 1/100 seconds], - but I am as convinced as I am that physics has never been so conscientious in searching for natural decisions for Galilean claims.

These Galileo-mechanics with the idea of uniformity seriously believe that the pressure with which a mass presses down has as little significance for the falling acceleration as the color of the mass does. And such nonsense is proclaimed to children in all schools! In truth, the falling paths of otherwise similarly shaped but unevenly heavy masses in any medium are distinguished by a difference that depends on the density of the medium - the thinner the medium, the smaller the difference along the same path. This difference becomes minimally small, but not infinitely small, in the empty ether. And therefore, the remark belongs in this treatise. From a zero difference in the ether, no other than a zero difference could ever develop in air. Only if there is also a minimal difference in the ether can it increase when the medium becomes denser and offers more resistance. However, physicists are not only unnatural by prohibiting any publication of my solid thoughts in their journals, - just as they did with Robert Mayer. The professional closure among these 'enlightened' minds is even as narrow against a logician and philosopher of facts as it is among a clergy that fears the emergence of Protestant truth. In conclusion, I will provide a cartographic illustration of this theory, where one must imagine the cartographic law. I represent the entirety of space through a double sphere, which is supposed to form a unity in its duality. This means: when in this cartographic representation one Earth's surface splits into two representations, the thought must always consider that each point of the Earth's surface has a double representation, but that it is still only a single point. Similarly, in the beautiful figure of Köldler (Fig. 8), the one circle center is represented four times in the four corners of a square. This does not harm it further. The main thing is that the person understands something when he 'sees' the matter.



180° INNER SEA
OLEANDAMPFER
(Olea Steamer)
CONTINENT
RAILWAY
FLYER
9
NOW
320
CELESTIAL CENTER POINT
(LETETES DREAM CENTER OF ALL STARS.)
270 LIGHTHOUSE I.
GIANT DRILL
TOWER
GIANT
MINING
WORK
INJEL
REEF
GIANT.
RADIO TOWER
LIGHTHOUSE I
DEEP
SEA
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RIVERBED
. DIERNCT-BARTHEL. INV.1939.
. RUDOLF KOMMER. DEL-1939
MOUNTAIN
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II.
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REEF
GIANT DRILL
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I. LIGHTHOUSE
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EARTH CENTER POINT.
90°
(. GRAVITATIONAL
CENTER OF THE WORLD.)
OCEAN
FLYER
RAILWAY
CONTINENT
OLEANDAMPFER
(Olea Steamer)
Ido. INLAND
SEA

Figure 20.

Thus, the journey through this model of the universe as a double sphere has the property that one must jump from the outermost ends of one periphery to the identical point of the other periphery. Then the journey is a cycle that leads over the Earth's center and over the celestial center as the two cardinal poles of space. Is it not permissible to map the whole of the Earth's surface as a duality of circles, one containing the northern half and the other the southern half of the Earth's surface? And isn't the equator present twice in this image, even though it is a single one? Surely you will admit that if you look up this image in an atlas. This is exactly how this representation of the true All-World is to be understood. The relief of the Earth's surface is of course exaggerated in scale (around 300 : 1). A sphere diameter is 20,000 km in spherical space, the Gaurisankar is almost 9 km high. For a full understanding of this cartographic figure of the entire universe with heaven and Earth, one should make it clear that the circumference of a visible sphere here is a few centimeters, but that the circumference of the Earth is actually around 40,000 kilometers. If one wanted to draw a sphere whose circumference is 40,000 km, its surface would be as flat as the indicated horizontal lines in the middle between the two spheres. But such a large sphere does not fit into our small box of imagination, because it continues beyond this box in all directions. A small sphere, which should fit into our box of imagination, we must necessarily draw small, that is, we must equip it with a very strong curvature, as Figura shows. But this curvature is not the reality of the Earth's surface, but only the way of illustration for our small box of imagination. Only a cosmic super-giant could put the cosmos as it is into his box of imagination. We little people have to bend and shrink the thing. But whoever does not believe that the Earth's surface is actually as flat as the horizontal dividing lines in the middle between these two spheres (which only gape apart for our imagination, but belong together in every point in nature), let him do the experiment to mathematically imitate the real Earth's surface as it is. He takes a plane and planes a table exactly parallel to the ground. One must already be strongly blinded by the false theory if one does not realize that this planed surface, or a horizontally polished marble surface, is exactly what the Earth's surface is in its entirety in a small fragment. The real Earth's surface is the surface of the maximum sphere, which is neither curved upwards nor downwards. The astronomical basic laws of this real worldview are the following: 1. The annual movement of the Earth, which I recognize like the system of Copernicus, is based on the rotational movement of the Great Earth with a fixed center around the axis of the ecliptic, as Figure 19 shows. During this rotational movement, every observatory on the Earth's surface has a forward movement like a planet. "The Earth" has no forward movement at all. It is also not a small body like a globe. But it is the maximum sphere, which is interwoven with the law of space, the lower half of space. The position of the magnetic poles is nature's proof of the correctness of this view versus the Copernican theory of forward movement. An observatory at Franklin Bay (Canada) stood at the north pole of the sun's movement 1) (cf. Figure 19). 2. The fixed stars are connected to the main axis of the space crystal as the local signs of the space crystal. The main axis is that connecting straight line between the upper pole and lower pole of space that goes through the North and South Poles. Between the Earth and the fixed star system, the rotation of 360° takes place daily around this axis. The axis itself is common to the fixed star heaven, i.e. the ether crystal, and the Earth. What happens at the North-South axis also happens at the fixed star heaven, without it needing to be noticeable - because North remains North. The circling of the North-South axis by around 231/2 degrees would not even need to be noticed if the movement were a gyro movement on a globe with a cone-shaped inclination axis. In reality, however, the Earth is not a globe, but the maximum sphere, and what can be illustrated as a gyro on a globe is in reality a fluctuation-free double rotation of the total plane in itself around two axes at the same time. That is just as possible as it is possible.

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1) If one abstracts from the 365 daily orbits of the Earth at this observatory and subtracts a single rotation of 360 degrees from the apparent annual path of the sun thus obtained, since this comes from the ecliptic rotation of the Earth, then the solar path that one retains is the objective annual forward path of the sun in absolute space independent of any Earth movement. For the pole of the ecliptic differs from all other points of the Earth's surface in that it does not suffer any annual translation in space, since it is the pole of rotation itself.

It is that two points, which are 180 degrees apart, can be connected by infinitely many different lines. The maximum sphere with geoid law rotates around two axes, with the total plane rotating within itself without wobbling. 3. The slow shift of the Earth's axis in terms of a rotation of 26,000 years is seen in the fixed star sky as the slow displacement of the viewpoint or angle of vision, which is misunderstood in the Copernican worldview as the movement of the solar system through the fixed star spaces. 4. Due to the annual movement of the Earth, I advocate a quasi-Copernican and not a Tycho system. But I believe it is correct to attribute to the sun a motion of its own in absolute space around the upper pole. This approach has the theoretical advantage that one can then reduce Kepler's ellipses with their perihelion and aphelion, i.e., with their specific eccentricity, and with their inclination angle against the solar orbit and with their orbital period to something simpler without changing them: namely, to the combination of solar rotation and planetary rotation around the upper pole of space. This is already suggested by the fact that nature shows that eccentric curves are always resultants, never primary central movements. The Keplerian ellipses, in whose focus the sun stands, are, however, eccentric curves. 5. The moon cannot be tolerated as a stationary Ptolemaic body in the sky. It fits into the movement law of the planets under the condition of the double rotation of the Earth body. It is not essentially different from the planets, such as Venus. It is a sign of the falsehood of the Copernican space system that the moon has been theoretically pushed into the role of an exception. 6. All energy comes from the sun, including the secondary energy of the entire fixed star sky. All mass comes from the Earth, not only the moon but also the planets and meteor masses. These are, of course, all much smaller in spherical geometric calculation than the Earth's mass: less than 100 km in diameter. All masses in space have risen from the Earth in cosmogonic primordial times, which, in the variety of their elements, also includes those from which the planets consist, namely magnetite and similar substances. Towards the end of the entire cosmic cycle, all masses will fall back from the sky, as is only noticed today with small masses. The cause of this falling is that the anti-gravity energy, by which these bodies once rose into space, has become weaker than the mass at their height in space, thus weaker than gravity. The 'thread' with which they are invisibly connected to the energy center of the upper pole has broken, and they have plunged towards the gravitational center. 7. The sun itself is either just an energy convulsion in the ether, whose spectrum, besides the primary continuous spectrum, also contains the entire line spectrum of the coupled color vibrations, or it is a very thin mass, hardly comparable to any fact on Earth. From this thin mass, the magnetite colossi of the planets could not possibly have been ejected. It would gradually be time to realize that the popular ejection law of the Kant-Laplace hypothesis is indeed very inadequate in cosmogony because it does not recognize the polarity of mass and energy. 8. Between energy and mass, centrifugal oscillation and centripetal attraction, between the male and female principle, between above and below, between sun and earth, the entire arc of cosmological reality stretches. Some were close to recognizing this, but Copernicanism ultimately prevented them. I mention, for example, Schelling and Bachofen. Such fundamental lines of a new astronomy are fundamental lines, just as if one were to present the fundamental lines of the Copernican system in the same brevity. The implementation of this strategy from the philosophical standpoint through special application is the task of astronomers. Only in case of difficulties may they inquire further. The small intricacies about fixed stars of the last order and the latest planetoids should no longer be perceived as noteworthy for long. Thus, the astronomy of the future can do nothing better than to develop the great mathematically-philosophical plan of a comprehensive worldview from the perspective of humanity and the cosmos, as the last 400 years have diligently and with a multitude of valuable materials worked out the much less good foundations of Copernicus. Humanity will thank it if it fulfills its duty to establish the worldview and sense of life on the foundations of wisdom and true human reason. Every person is born with a Platonic 'anamnesis' (recollection) of the essence of things. 'The monad is the mirror of the universe' (Leibniz). No person has ever been born with the idea of dust and earth in heart and mind. Away with this deception based on supposedly mathematical necessities that do not exist at all. And away with the suppressors of decent free research everywhere!

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Brief summary of the cosmology of the Maximal Earth in total space, along with the provision of evidence.

It is also completely clear from an epistemological standpoint for any opponent that the usual fragmentation system of the universe has come about because the human mind has introduced a measure that is both unfounded and grotesque: namely, that the Earth is conceived as a globe in a space that expands around it and is arbitrarily many times larger than the 40,000 km of the Earth's circumference. Furthermore, it is completely clear that another mental prerequisite for processing astronomical observations is given by the fact that space has the property of a sphere that curves back on itself in all directions like a 360-degree peripheral sphere (where it is not limited by a boundary), and that in this space the Earth is a maximal sphere, meaning the lower half of the universe. The content of the new cosmology is that, as figure 20 shows, the whole universe consists of two halves: the Earth and the celestial space. Both are not, as in previous theories, completely asymmetrical, but symmetrical. The Earth is a fully valid half in the structure of the universe. In the figure, to fit the image into the small curved head of man and into the conception of this head, the two spheres must be drawn as curvature spheres that gape apart at their surfaces. In reality, the spheres are such that their surface has a circumference of 40,000 km. This means they are as flat as a table and touch each other over their entire surface. (The cross lines indicate this.) Whoever does not understand this fact scientifically should acknowledge it as it is in nature. That is sufficient. The understanding knows that it is geometrically necessary for the total space to consist of two such maximal spheres. The Earth's surface of 40,000 km in diameter (round) is thus the equatorial plane of space, the total plane. Between heaven and earth exists the polarity, the harmony, the proportionality, the wholeness, the kinship with the organic structure of man, all of which properties have been destroyed by the misstep of modern false knowledge. Among the factual evidence for the correctness of this doctrine, I will only mention the following: 1. The magnetic poles on Earth are the factual evidence for the double rotation of this body around two axes, namely the north-south axis and the axis of the ecliptic. Therefore, the theory of the movement of the Earth as a small body according to Copernicus falls apart. And everything that has been derived on the basis of this movement theory all the way to the fixed stars collapses. This means that the entire usual astronomical system has already been eliminated by the statement of nature in the magnetic poles of the Earth. 2. From the geometric deduction of the Kommerschen and Köhlerschen discoveries, it emerges that the main properties of the Earth's surface are derived in the 'geometric laboratory' without any experience of the external nature: the obliquity and axis of the ecliptic, the tropics, the polar circles, the magnetic poles, the inequality of the spatial axes (i.e., the so-called 'flattening'), all with great accuracy. The requirements of the symmetry riddle are only fulfilled in both the Kommerschen trisection and the Köhlerschen quadrature under the condition that the spatial law with the inequality of spatial axes in a specific amount of about 1/270 is the Earth law itself. Thus, it is mathematically proven that the Earth is not just some small body in space, but that it embodies the spatial law itself, meaning it is the spatial sphere itself, the maximal sphere. 3. The only celestial bodies whose sizes we really know - the meteors - have sizes that do not correspond in any way with the usual calculations based on the dust body of the Earth. Rather, they have quite reasonable sizes, as one would expect in the system of the Maximal Earth. They may be as large as rocks or houses or even mountains, and the planets may have diameters larger than our optical horizon on Earth. But one will never find anything that corresponds with the known inflation madness. 4. The largest walls on the Moon have a diameter of 200 km according to the old inflation calculation. According to the calculation with the Maximal Earth, they have a diameter of 1 km. This is particularly true for a sphere that is also much smaller than the Earth according to the old system, in favor of the system I represent. 5. The Earth's interior is supposed to have a specific weight according to the gravitational conclusions of the dust particle system, which necessitates that down there iron or another heavy metal forms the mass of the Earth body. However, hot springs, geysers, and the underwater Gulf Stream have been flowing from the Earth's interior (and not just from the atmospheric groundwater) for millennia. They contain no iron in compact masses, but water with salt solutions. Therefore, the Earth's interior cannot have the specific weight that...

1) See also the newspaper 'Neues Deutschland', Wilsdruff, July 15, 1939.

One must adhere to the theory of earth particles. This entire system does not correspond to the actual facts. In the new system, however, there is nothing to prevent one from attributing to the Earth's interior that specific weight which must be inferred from the facts. The existence of the Earth's crust with its many light metals (sodium, calcium, aluminum, etc.) and metalloids (hydrogen, carbon, oxygen, nitrogen, phosphorus, sulfur, silicon) seems to me to be evidence that there is no fundamental presence of heavy metals in the Earth's core, but rather cosmogonic salt solutions that could have precipitated into the Earth's crust. It goes without saying that the physical and chemical laws in the cosmogonic stages of the emergence of things were not the same as those we find in today's cross-section of time. Pressure, temperature, solubility, chemical affinity, gravity, energy radiation were not the same in the cosmogonic times of the becoming of today's states as they are in today's states themselves. The 'laws of nature' transform, just as the Earth's axis shifts and the vernal point moves across the celestial equator. The existence of the Earth's crust requires a different fundamental condition in the Earth body than what is claimed today based on the old astronomical system of the small Earth. Metal is merely an inclusion or organ in a much richer organic context. The metallic bodies that have risen from the Earth (moon, planets, meteor masses) seem to show that the metallic principle has a special affinity for energy and anti-gravity in the realm of all mass realities. The Earth's crust consists largely not of heavy metals, but of light metals, salts, and metalloids. These must have precipitated from a fundamental solution. The hot salt springs, the volcanoes fed by the sea, the petroleum sources of organic origin, the saltwater of the ocean as a pinched-off and modified offshoot from the core of the Earth body are, for me, more significant reasons for my assessment of the Earth's interior than the ridiculous consequence of the Newtonian gravitational system in conjunction with the logic of uniformity and the Euclidean small curved Earth that has already entered our conception. Here I hope to be assured of the support of geologists and paleontologists, as has already been testified to me in sympathy by Edgar Dacque. 6. There has never been a primitive people, no gifted people otherwise, and no human personality that had something like a collection of worlds made up of points and dots, separated from each other by light years, in the primal grounds of their intuitions. Rather, all the facts of the God-created human fundamental psyche agree that such a point system could at most be artificially created, but is not naturally present in the world. And the general psyche of all humanity with its intuitions of the right is a fact. And it is a fact that since Copernicus there have always been 'Protestants' who did not want to participate in the gross nonsense: Tycho de Brahe, Luther, Goethe, Hegel, Bachofen, Strindberg, Schlaf, Neupert, Morrow, Lang, and Barthel. 7. The speed of light cannot be constant, for an ejected motion must always be delayed, because the force resides only in the light source. And it is not linear in the gravitational field, but curved. Thus, the old system of astronomy cannot be correct. For it is based on the assumptions of uniformity and linearity of light propagation. 8. When one moves upward from the Earth's surface, it seems to curve in a bowl-shaped manner due to the curvature of the light rays, extended far out, like an inverted apparent celestial dome. The Earth also does not reflect sunlight yellow like a planet, or red, but absorbs it blue or violet. For behind the murky atmosphere, the dark background according to the correct Goethean color theory gives blue or violet, but not yellow or red. Thus, through form as well as through color, it is proven that the Earth is not a planet, as romantic superstition tried to make it seem. The Earth is the Earth - the mother of life in the universe, the fundamental half of the world, the bearer of life and world history, the midpoint between the North Pole and the South Pole, incomparable, unique, a genus unto itself but not a planet, as there are also such things. The planets are masses ejected from the Earth like the moon. One must allow the logician to say that the unjustified leveling between concepts that are fundamentally different must produce great errors. The uniqueness of the Earth and the uniqueness of humanity must be relearned after everything has been misunderstood. Man is not an animal species, the fixed stars are not suns, and the Earth is not a planet. It is a fact that humanity likes to stumble into easy, comfortable, but false conceptions, and that there are and must always be reformative spirits who oppose this, so that the future may continue to clarify.

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Table of relationships of absolute geometry

to the logically connected systems of astronomy with their individual cases in 5 typical instances and the relationship of these logically possible cases to

objective nature with its facts. Geometry is fundamental to all of astronomy including gravitational theory and optics.

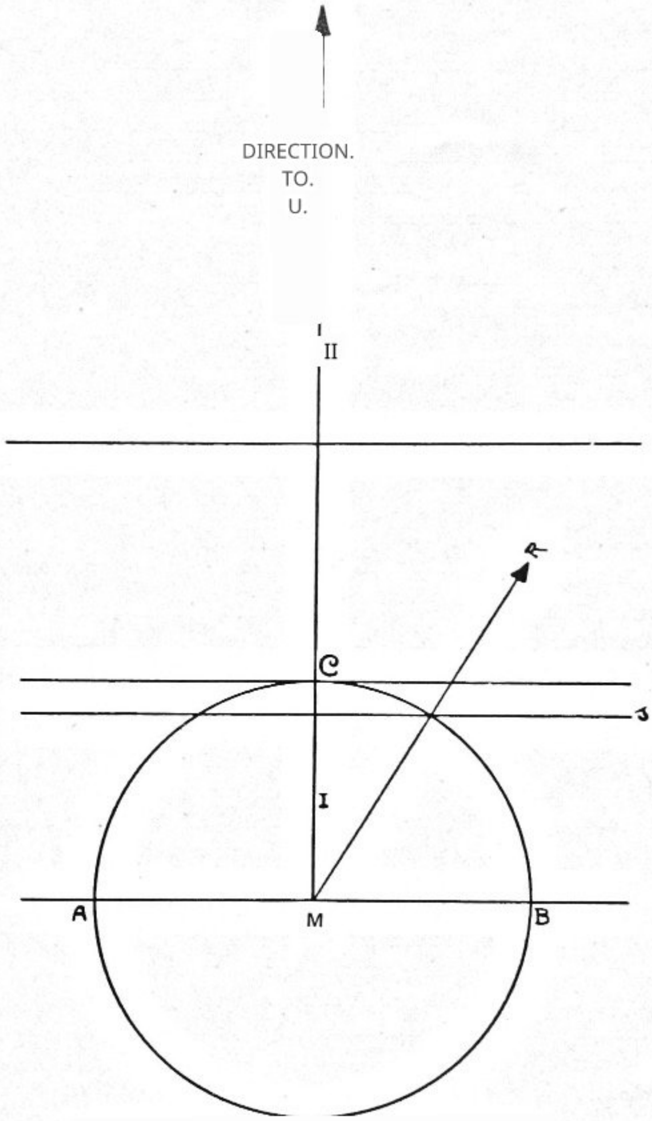
	Spherical geometric curvature measure K of the Earth body in spherical space, precisely and clearly given on a spherical surface, where the Earth circle is a circle of corresponding curvature:				
	K=+90°	K=+45°	K=0°	K=-45°	K=-90°
Earth body	Euclidean convexsphere, spherical point sphere	spherical great circle	Half-maximal sphere	Spherical over-sphere	Spherical almost total sphere
Earth's surface	globe-curved	imperceptibly convex	total plane	imperceptibly concave	Euclidean concave
astronomical distances (parallax results)	grossly exaggerated	moderately	normal	slightly reduced	more strongly reduced
astronomical masses	extraordinarily large	in a ratio to the Earth	normal, smaller than the Earth	even smaller	as small as possible
axiom of gravitational theory	uniform	slightly accelerated	normally accelerated	more strongly accelerated	as accelerated as possible
axiom of light speed	constant	slightly delayed	normally delayed	more strongly delayed	as much as possible delayed
Earth's flattening 1/270, obliquity of the ecliptic, position of magnetic poles, meteor sizes, hot springs, Earth's crust, oceans	unprovable	unprovable	precisely derived	unprovable	unprovable
	incomprehensible	incomprehensible	self-evident	partially incomprehensible	partially

Previous science has primitively only seen the case K = +90°. For people have always slightly curved the large Earth body into an ordinary globe so that it fits into their field of vision. This globe body necessarily exists in a space that is infinitely larger than itself. Moreover, previous thinkers naively established the axiom of constancy, while nature carries the polar laws of acceleration and deceleration within itself. In contrast, the astronomy of the future established here governs all cases of absolute geometry. And it recognizes with reasons that the case of objective nature is K=0°. The Earth body is the center of all possibilities. It is the half-maximal sphere of space, and the Earth's surface is the total plane of the wave with the inequality of its two main axes of 1/2.0 corresponding to the necessity of pure geometry, which is derived in this book. The well-known hollow sphere theory of Koresh, Morrow, Neupert, and others is listed in the above table under K = -900. For this case is affected when one gives the Earth's surface a Euclidean concave curvature. The invention of a shell limitation against infinite space instead of the Earth body, which had to be infinitely larger than the astronomical hollow space, is merely a childish addition by the respective theorists to avoid the giant Earth body that would be as large as the entire astronomical space for the Copernicans. This table is a very important scientific statement of facts, which is being established here for the first time. Only malicious intent could suppress the existence of this universal idea in science.

About the imaginary intersection points of a circle and a line.

Given a circle with center M and a diameter AB. If a line is moved parallel to this diameter, it initially intersects the circle's perimeter at two real points. Then, the case arises where the two points converge into a single point, namely at the tangent. Furthermore, there are no real intersection points of a line with the circle. It follows not only from the connections of analytical geometry but also, in my opinion, from pure geometric consideration, that the intersection points of the line with the circle, even if they have slid continuously from the real into the unreal, should be referred to as 'imaginary intersection points.' I envision it as a demand arising from the law of continuity that the two secant points, which move towards each other on the line as the line moves away from the diameter, eventually touch, then cross each other, and continue to exist in an 'imaginary state' that must be as logically and geometrically fixed as the real one. However, Euclidean infinite geometry does not provide a way to fulfill this very legitimate demand for the specific localization of imaginary intersection points. It can only be said that the line, which shares no real intersection point with the circle, indeed shares 'imaginary intersection points' with it, and if someone asks where these points lie on the line, no answer is given! The matter of 'imaginary intersection points' appears merely as a miserable phrase without any reality content. Once again, points are named that cannot be localized as points. This is gross nonsense, but not science. On the basis of polar geometry (where the plane is the limiting case of a real spherical surface, not infinitely large, i.e., impossibly large, but maximally large, endowed with a natural constant), the imaginary intersection points of a circle and a line are well definable and locatable. It is on such a basis that the continuous cyclical process of intersection points between a circle and a departing line can be fully carried out. (See Figure 21.) In polar geometry, the distance of the radius MC is a unit, and the distance from C to the maximally distant point at a 90-degree angle from M is a second, very long, definite distance. Thus, the distance MC and the long distance CU, where U indicates the 'incredibly far' endpoint at a 90-degree distance, which lies on the plane equator with respect to M, can be divided in the same contraharmonic ratio, such that when a point I moves from C to M, the associated fourth point II moves from C to U, with the distance CU being divided at every moment in the same ratio as the distance CM. 1) I call this relationship of four points the contraharmonic division of the distance CM internally and externally. It can only be defined in polar geometry, not in Euclidean geometry. It evidently has a certain affinity with the ancient scheme of 'harmonic division,' but it is not the same. When the contraharmonic division of a distance CM is established, then for every line parallel to AB, which no longer intersects the circle, there corresponds a second line parallel to AB that intersects the circle in reality. One only needs to fix the fourth contraharmonic point on the distance CM. Thus, the concept of 'imaginary intersection points' of a circle and a line is geometrically clearly defined. The external line, which does not intersect the circle at any real points, has two imaginary intersection points with the circle, defined such that these intersection points lie on the same pair of radii as the corresponding real intersection points of the contraharmonic line. After establishing the unambiguous relationship between real circle secants and imaginary circle secants, it is no longer necessary to describe the functional process that occurs with the intersection points when a line is moved parallel to the diameter across the entire total plane until it reaches the diameter again from the other side. I describe this course in its various stages: 1. The line has two real intersection points with the circle. 2. The line touches the circle, so the two intersection points have converged into one. 3. The two intersection points now cross each other, and the intersections become imaginary. The imaginary intersection points of each line lie on the coordinated radii of the real intersection points of the contraharmonic line. 4. The two imaginary intersection points remain very close to each other for a long time, almost like a tangent point. For the ratio division of the long distance CU requires proper paths when significant differences are to emerge.

1) According to my cosmology of the maximal earth in total space, MU == 10000 km.



·REAL; TANGENTIAL. AND.
IMAGINARY. ·CIRCLE CHORD.

Figure 21. The direction R determines on the contraharmonic line s' (explanation see text) the imaginary intersection point of this line s' with the given circle. s' is already very far away in this example, as the angle CMR is considerable, and therefore cannot be drawn on this sheet. The total visualization can only be provided on the surface of the sphere.

The two intersection points are slowly but surely moving apart. This movement occurs with acceleration. Once the 45 degrees of rotation of the radius vector are exceeded, the two imaginary intersection points on their line move further apart more and more dramatically.

The limiting case is where the separating line has become the plane's equator with respect to point M. In this case, the contraharmonic chord has, by definition, coincided with the diameter AB, and the maximally distant line (but not impossibly distant!) is what has been haunting the previous analytical vagueness as the 'infinitely distant line.' This line evidently has the property that its two imaginary intersection points with the given circle are 180 degrees apart on the line. And these same imaginary intersection points are valid for any circle around M, regardless of the radius size, concerning the same diameter direction AB. Thus, we have the salt: 'The maximally distant line with respect to a point M has the same imaginary intersection points with all concentric circles around M concerning a diameter direction AB.' (These are also the real intersection points of the entire family of parallels to the diameter.) This formulation is clean and correct. Usually, a false claim is made (e.g., Czuber, Introduction to Higher Mathematics, 2nd ed., Leipzig, Teubner 1921, pages 279-80), which forgets that with the rotation of the diameter AB along with all accompanying parallels, the two imaginary intersection points also change their position, and that with non-concentric circles, a shift of the maximally distant line occurs. Polar geometry is not unaccountable regarding differences. The usual statement 'All circles in the plane pass through two equal fixed points of the plane, namely the infinitely distant imaginary circle points' is too broadly formulated, not to mention that it is burdened with all the vagueness that is inevitably present in Euclidean geometry. Infinitely is not the same as impossibly. And one does not speak of the impossible as if it were something possible. Even the imaginary is not impossible, but well-defined. I add this as a logician. (By the way, complex numbers gain a direct relationship to angle trisection. See Czuber, op. cit., page 30.)

If the line continues to move further in the same direction away from the origin M, it enters the opposite half of the plane, which is concentrated around the antipodal point of M, M'. Thus, one now has to replace the relationship to the circle around M with that to the circle around M'. The circle around M' has, according to polar geometry, the equation 2. $x^2 + y^2 = -12$. (See Barthel, Introduction to Polar Geometry, Leipzig, Noske, 1932, page 125.) The relationship of the opposite half of the plane to the imaginary circle radius is unequivocally necessary, and this fits very nicely with the cycle of intersection points of circle and line. The line that continues to move thus first shares the imaginary intersection points with this opposite circle at a very large distance; the intersection points get closer together as they approach the opposite circle, and when the line runs tangentially to the opposite circle, the two intersection points become one.

Now the intersection points in the opposite circle become real, traverse the diameter, thus the antipodal point M', continue further to the other side, and the process, which has now passed 180 degrees of the total plane, runs back the remaining 180 degrees to the starting point with the same regularity. The cycle is closed: from M over the maximally distant line over M' and back over the opposite side of the maximally distant line to M. Through this clear and clean definition of the imaginary intersection points of circle and line, the polar geometry I founded (first edition in 1919) gains a new advantage. It is inevitable that all mathematics textbooks will shift from Euclidean to polar geometry.

Now I learn that in 1939, by ministerial decree, the 'new degree' has been introduced in Germany for the field of surveying. This means that the right angle is no longer divided into 90, but into 100 parts; the angle minutes and seconds are also to constitute the 100th part of the higher unit. This has naturally achieved the desired alignment between distance measurement and angle measurement in polar geometry, albeit based on the somewhat inorganic decimal system. Expressed in new degrees, 1 km = 1 new minute, 1 m = 0.1 new second. One new degree is 100 km, where the equatorial total length is taken as the basis everywhere. The meridional requires the correspondingly correct specifications, as do the stereometric directions in space, which deviate from the 40,000 km, although not significantly, but differentially, varying continuously according to the specific direction. For the purposes of theoretical mathematics, however, this type of alignment between angle and distance measurement is by no means recommended. The angle in an equilateral triangle would then have the size of 66 2/3 new degrees, and the fraction 2/ is in the decimal system an 'infinite' irrational fraction. Such things show that the natural law of angles and times, of astronomical divisions and geometric harmonies, is not based on the decimal system, but on the duodecimal system, and that no human contrivance can change this. (Cf. Contributions to Transcendental Logic, Leipzig 1932.) The angle of 30 old degrees, to name just this example among hundreds, is something so harmoniously present and excellent that one could only make it unnaturally unrecognizable through the mechanizing decimal system. I therefore propose the distance second as a unit of length.

Summation of square roots - a geometric problem.

Recently, Mr. Max Kohler has succeeded, based on his circular harmonic geometry, not only in demonstrating all square roots of whole numbers as distances in circular harmony, but also, under certain circumstances, in representing a square root (that is, a certain circular harmonic given distance) as a sum or difference of other square roots (that is, given distances). However, this seems to me not insignificant for scientific mathematics, especially since it has 'passed by without a trace' on the important problem of representing square roots as sums or differences of other square roots. I pose a general question that may become significant for geometry, just as many Fermat questions are for algebra:

n. Vatm.Vb=y.Vx

where a, b, and x are to be integers, and I also refer to the special equation on pages 19 and 23. The problem of summation of square roots is an organically geometric problem, a distance problem. In algebra, one is only interested in the product and quotient formation of like roots - which again proves that algebra is a poor guide for geometry. Geometry has its own laws. Eigenrights. Eigenfoundations. The micro-error in the regular circle is, of course, clearly evident here, corresponding to the fact that the exact circular harmonies are bound to the organic Gevid circle with the flattening index of 1/270. The magnitude of the micro-error varies depending on the arrangement and function of the square root distances in the circle. For example, Kohler recognized a distance of 1 10 as the sum of the distance 13 and the distance | 2, following the 'Golden Ratio.' However, in the mechanics of uniformity, it is precisely calculated,

$$\sqrt{10} = 3{,}1623. \qquad \sqrt{3} + \sqrt{2} = 3{,}1463.$$

There is therefore a micro-difference of 0.016. For the pure sum of two square roots, I have derived the following formula from the usual geometry of the regular circle (Pythagorean theorem):

Va + Vb = Va+b . 12 . cos (450-y), where tang y _ 1 ª is. Vb.

This can also be written as:

Va+Vb =V2a+ 2b. cos (450_angle tang y a)

The formula is accurate for all cases of a and b and should also be included in textbooks. This equation has an interesting relationship to the geoid, which must be presented in a separate paper. The corresponding equation for the difference is:

Va-Vb=Va-b . tang (450 _ angle sin Vb).

About the cube with "double the volume."

While, as shown, the two ancient problems of squaring the circle and trisecting the angle are organically solved within the circle harmony itself, which Messrs. Köhler and Kommer have undoubtedly succeeded in discovering with the corresponding logical subtleties, the third of the known classical problems, the "duplication of the cube," is different.

The search for the cube with double the volume means the question for the 1 2. This cannot be solved constructively with compass and ruler because it contains an inorganic requirement that has no fulfillment in the circle harmony itself. If you absolutely want the 1 2, then you have to calculate it and then you have found the two-liter cube through a mechanical artificiality, which belongs to the liter cube, just like two tin dishes otherwise "belong together." In truth, the organic connection between square and cube is a different one. And this organic connection is also inherent in the circle harmony and easily achievable with compass and ruler. (See Köhler's triangle ABC in Figure 5, which also contains the cube diagonal 1 3). The cube that organically belongs to the double square is the cube in which all flat cross-sectional areas have double the size, and whose volume thus relates to the volume 1 of the basic cube

relates like (1 2)3. Not the 1 2, but the (1 2) " is the organically correct formula with which one proceeds from the double square to the organically associated cube. This knowledge now also justifies why

it is impossible to find the 1 2 in the circle harmony. Incorrectly posed questions are simply not solvable. The anatomy of the circle contains only what is organically right. The logic of uniformity would consider the progression as natural: double line, double area, double body, etc. The logic of non-uniformity is supported in this case by the law of an acceleration, which reads: The normal distance 1 2 is assigned the square (1 2)2 and the cube (1 2)3. Generally speaking: In the n-th stage of dimensionality, what we call "double" in squares corresponds organically correctly to (1 2)". This progression contains a huge acceleration compared to a uniformity progression. Instead of the "cube with double the volume", there is already a volume of about 2.8 .., and such further accumulation of quantities with increasing dimension order undoubtedly has a great significance in the depths of organic natural laws. Because the natural forces of various kinds are different dimension orders of cosmic reality, which is studied in the simplest 3 orders by geometry. .

A task for crystallographers.

In crystallography, one knows the "regular system," whose three axes are perpendicular to each other and are supposedly exactly equal. According to the justifications of this book, however, the exact equality of axes is neither in the organically correct geometry nor in nature in any way present. The perpendicular axes of nature and geometry always differ by a geoidal difference of around 1/270, if no coarser differences are present. It would be worthwhile to carry out precise precision measurements of the axes on flawlessly grown natural crystals of the regular system, and it is strongly suspected that the absolute machine equality also does not occur in the natural crystals, but is replaced by the unnoticed small geoidal inequality of the axes in the regular system. .

From the books of Ernst Barthel: Man and the Eternal Backgrounds. Philosophy of Religion, Metaphysics of Time, and Ethical Goal Determination. Munich, Ernst Reinhardt, 1939. Man and Earth in the Cosmos. Publishing House for Folk Art and Folk Education Richard Keutel, Lahr (Baden), 1939. The Cosmology of the Great Earth in Total Space. Otto Hillmann Publishing, Leipzig, 1939. Cosmological Letters. A New Doctrine of the Universe. Paul Haupt Publishing, Bern and Leipzig, 1931. Introduction to Polar Geometry. 2nd edition of 'Polar Geometry'. University Publishing by Robert Noske, Leipzig, 1932. (Distributed by Fr. Foerster, Leipzig.) The World as Tension and Rhythm (Epistemology, Aesthetics, Philosophy of Nature, Ethics). Leipzig, same publisher and same distribution, 1928. Representation and Thinking. A Critique of Pragmatic Understanding. Munich, Ernst Reinhardt, 1931. Goethe as a Symbol of German Culture. Berlin, German Civil Servants' Bookstore, 1930. Alsatian Spiritual Destinies. A Contribution to European Understanding. Colmar, Alsatia, 1928. (Biographies of Lambert, Lienhard, Schure, Schweitzer.) The scientific treatises, which number in the hundreds, are partially listed in the reference work 'The Writings of the Cologne Lecturers' (Balduin Pick Publishing, Cologne, 1938) pages 400-405.