On the Hollow Earth Theory and Other Correct Pictures of Our World

Horst Hübel, July 1996
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Lecture given to the association "Volkssternwarte Würzburg e.V."

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IX Literature

On the Hollow Earth Theory and Other Correct Pictures of Our World

Horst Hübel, July 1996

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I Description of the hollow world

As has long been known, the Earth is a sphere with a radius of about 6400 km, a sphere in whose interior we are located together with the entire universe. As you can see with the naked eye, the Sun is a relatively small disk or sphere in the sky, as is the Moon. Together with the other stars and distant galaxies, they are located inside the hollow sphere, quite close to the center. You know better than I do how astronomers determine the radius of the Sun or the Moon. It is now considered certain that the Sun has a radius of about 1.2 m, the Moon about 120 m (it is closer to the Earth's surface). We stand with our heads facing inwards on the inner skin of the Earth's surface.

Do not think that I am appearing before you today as a cult preacher to sell you obscure pseudo-truths. Everything I am telling you about today has been proven or at least can be proven. As a physicist, I cannot afford to sell fairy tales as true. And you will see: All claims correspond exactly to observations. The observations are more in line with the fact that the sun is a small disk than a ball of gas with a radius of 700,000 km.

II Historical

However, the origins of this idea come from a sectarian area. In 1870, a homeopath named Cyrus Reed Teed had an apparition in the small American town of Utica. One night an angel appeared to him, I believe his name was Koresh, and revealed the hollow earth idea to him. As a result - such apparitions are not something that happens every day - I would have founded a religious community, as Teed did. He found several thousand followers in Chicago. 200 of them founded a town in Florida. The inhabitants there supposedly lived peacefully like brothers and sisters, and so it is no wonder that they died out after a while and have now made their town available to posterity as a national monument. How someone comes up with a new idea is something that an outsider can hardly criticize. In Newton's case, the apple that fell on his head while he was fleeing from the plague supposedly played a role. At the same time, he saw the moon and it led him to believe that the same gravitational force acts on both.

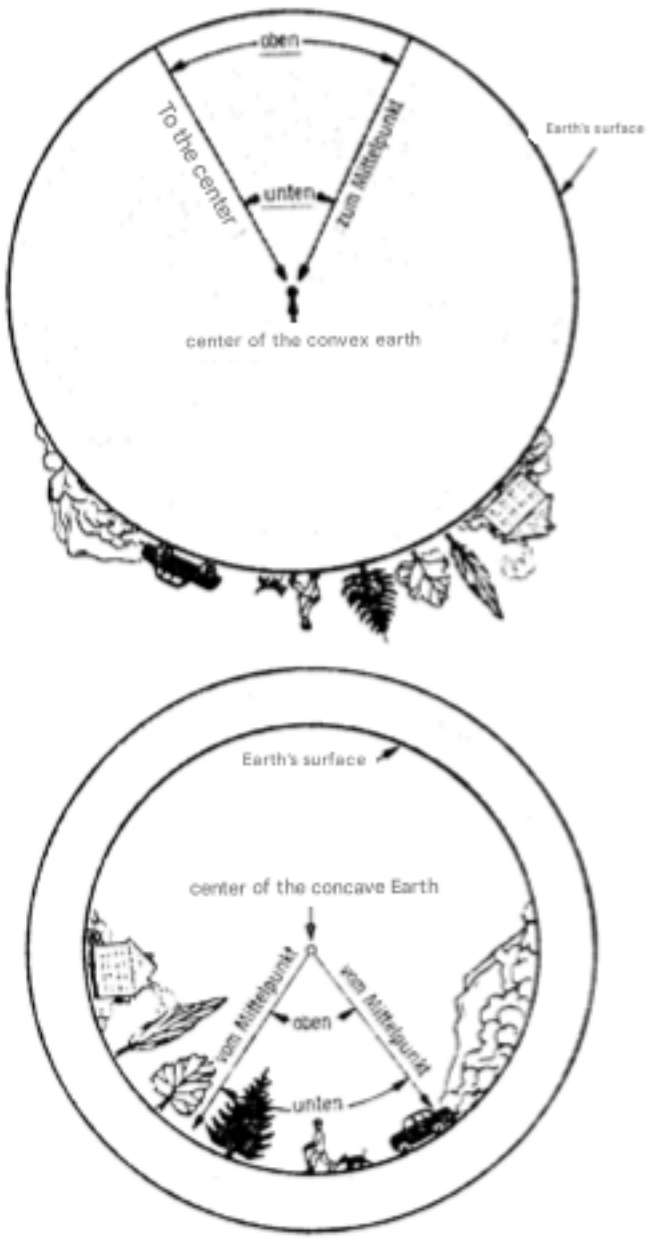

Fig. 1. The world view of the hollow world theory ([4], p. 28)

Fig. 1 Representation of hollow world and normal world according to J. Lang, taken from the article by R. Sexl in MNU, 1983, p. 454

In the 1930s, years in which apparently very

many disastrous things could be published, a Mr. Johannes Lang in Vienna took up the theory again and published a comprehensive book from which some pictures are taken. He explained quite clearly that the Copernican idea of the central sun and the earth as a solid sphere was completely unproven and discussed possible objections to the Copernican theory.

The hollow earth theory has been considered proven for a few decades now, although some modifications had to be made compared to Lang's. I base my explanation on the statements of the theoretical physicist Prof. R. Sexl, which I heard in Tübingen in 1983 (MNU conference).

III Refutation of objections

a) Preliminary remark:

Light spreads out in circles in the hollow world. The path of light to the edge of our universe corresponds to a path towards the center of the hollow world (Fig. 2, the hollow world is shown on the left, the normal world on the right).

b) A beam of light spreads from an object on the earth's surface (Fig. 3)

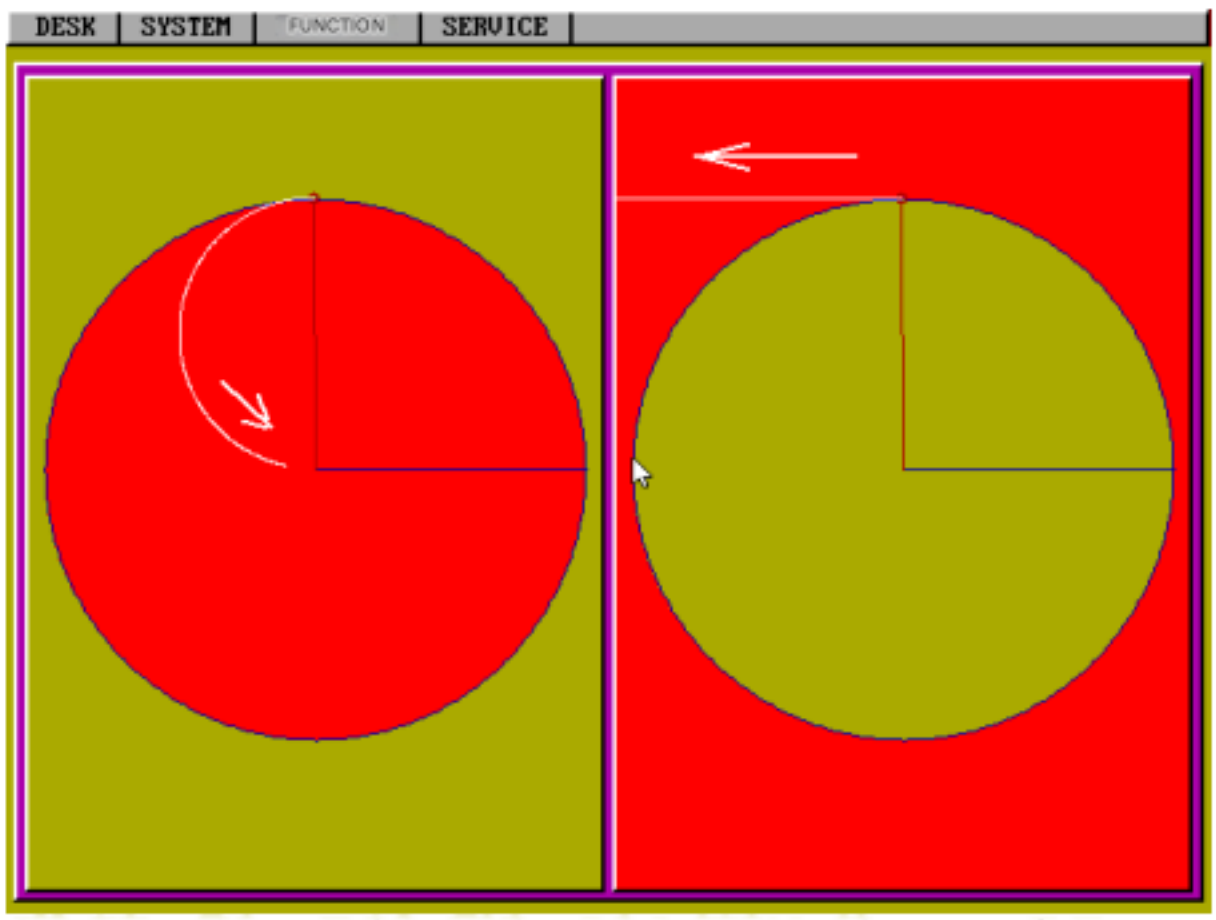

Fig. 2 A beam of light is emitted parallel to the surface of the earth. In the normal world it moves in a straight line to infinity and in the hollow world it moves in a circular path towards the center. (olive: "Earth's interior")

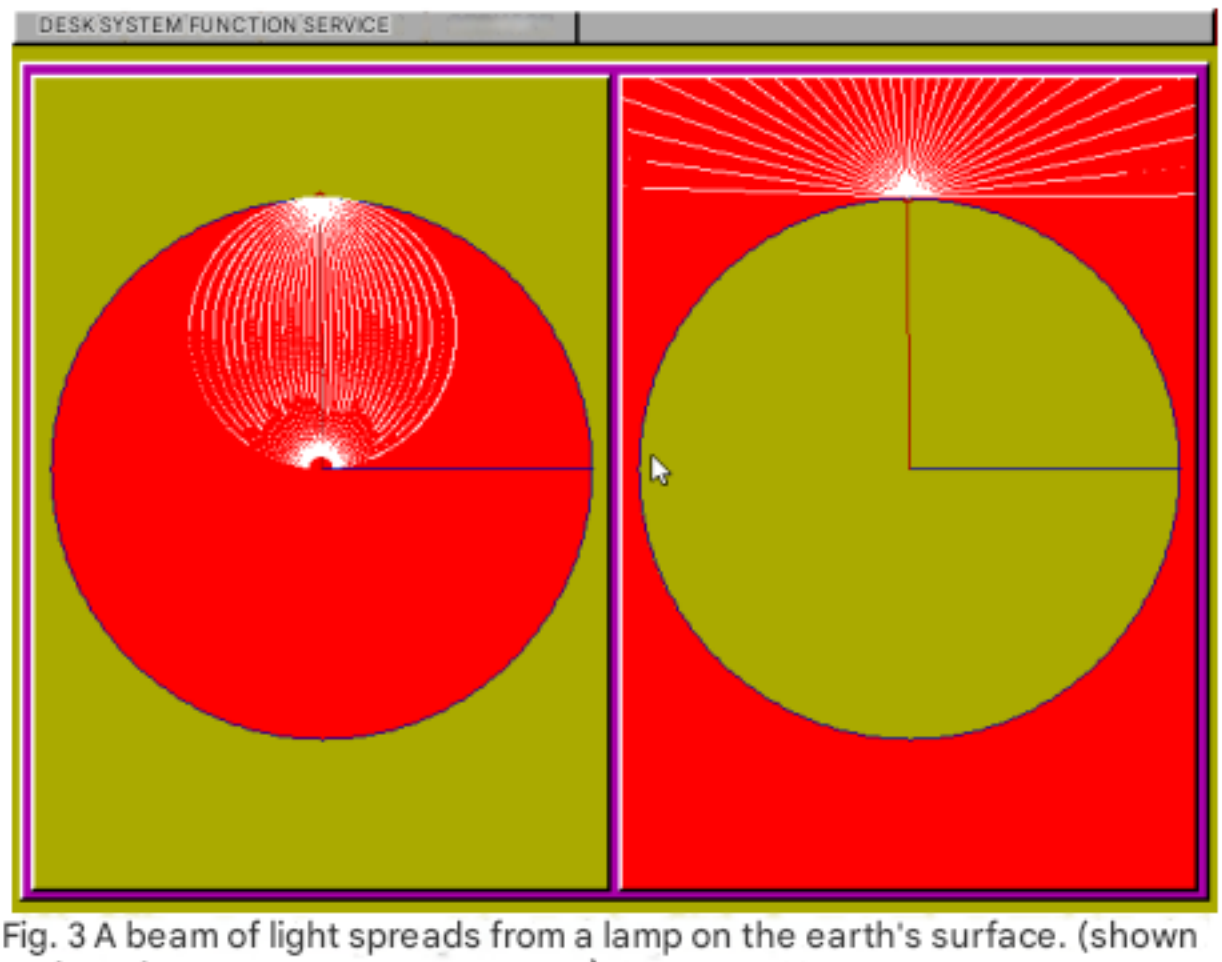

Fig. 3 A beam of light spreads from a lamp on the earth's surface. (shown using the HOHLWELT program)

c) Origin of day and night:

Because the earth rotates on its axis, or rather the cavity rotates on its parallel axis, different parts of the earth are illuminated over the course of 24 hours: while it is day here, it is pitch black elsewhere. (Fig. 4)

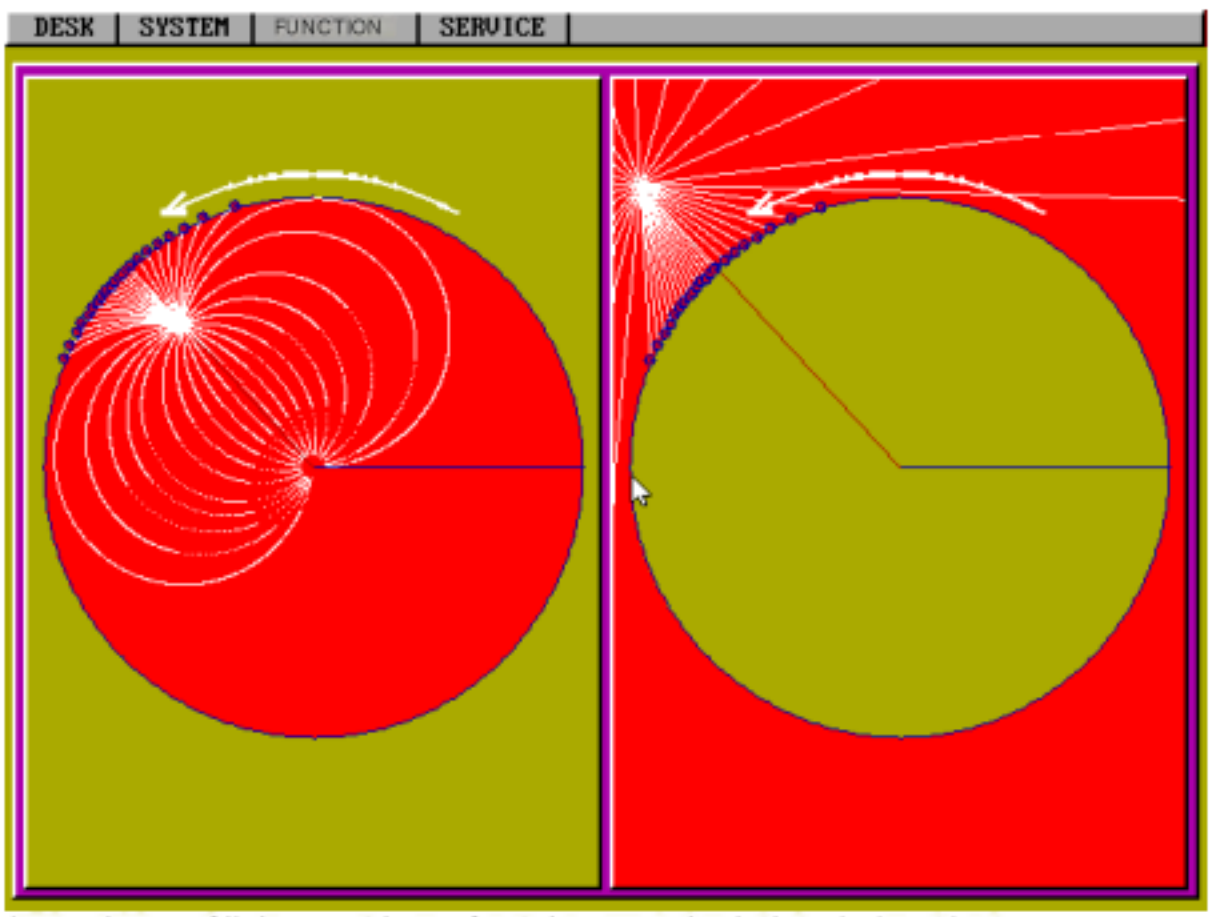

Fig. 4 A beam of light spreads out from the sun. In both descriptions, it can only illuminate a part of the earth's surface, where it is daytime.

d) Origin of the seasons:

With this position of the sun (Fig. 5) on the inclined ecliptic, It is summer in the northern hemisphere and winter in the southern hemisphere. As the earth orbits the sun / the sun moves within the sphere, the sun is above the northern hemisphere at some times of the year and above the southern hemisphere at others.

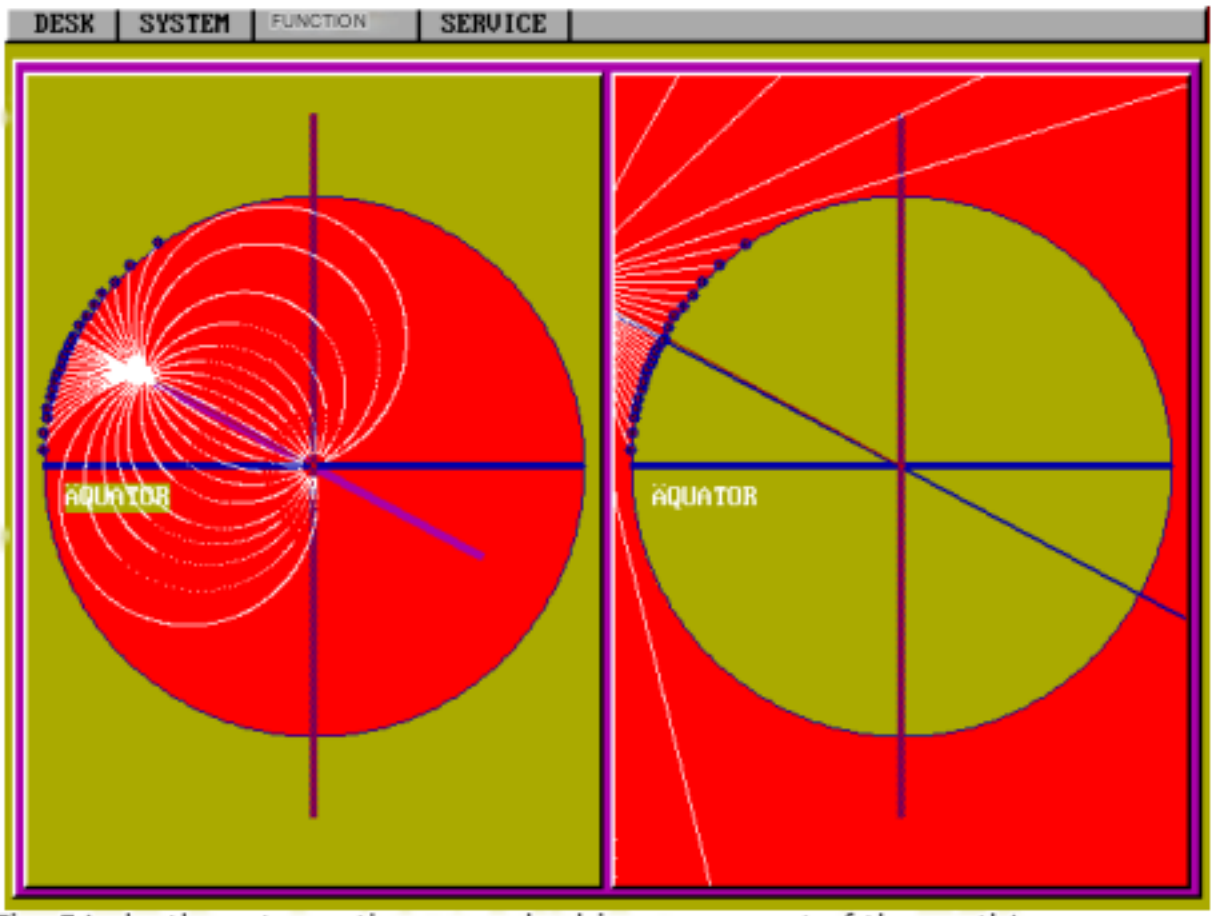

Fig. 5 In both systems, the sun only shines on a part of the earth's surface, e.g. a northern area. Where the sun is at its zenith, it is now summer. At the same time, it is winter in the southern hemisphere.

e) The horizon:

The mast of a sailing boat (right) is still hidden behind the horizon for an observer on the left. (Fig. 6)

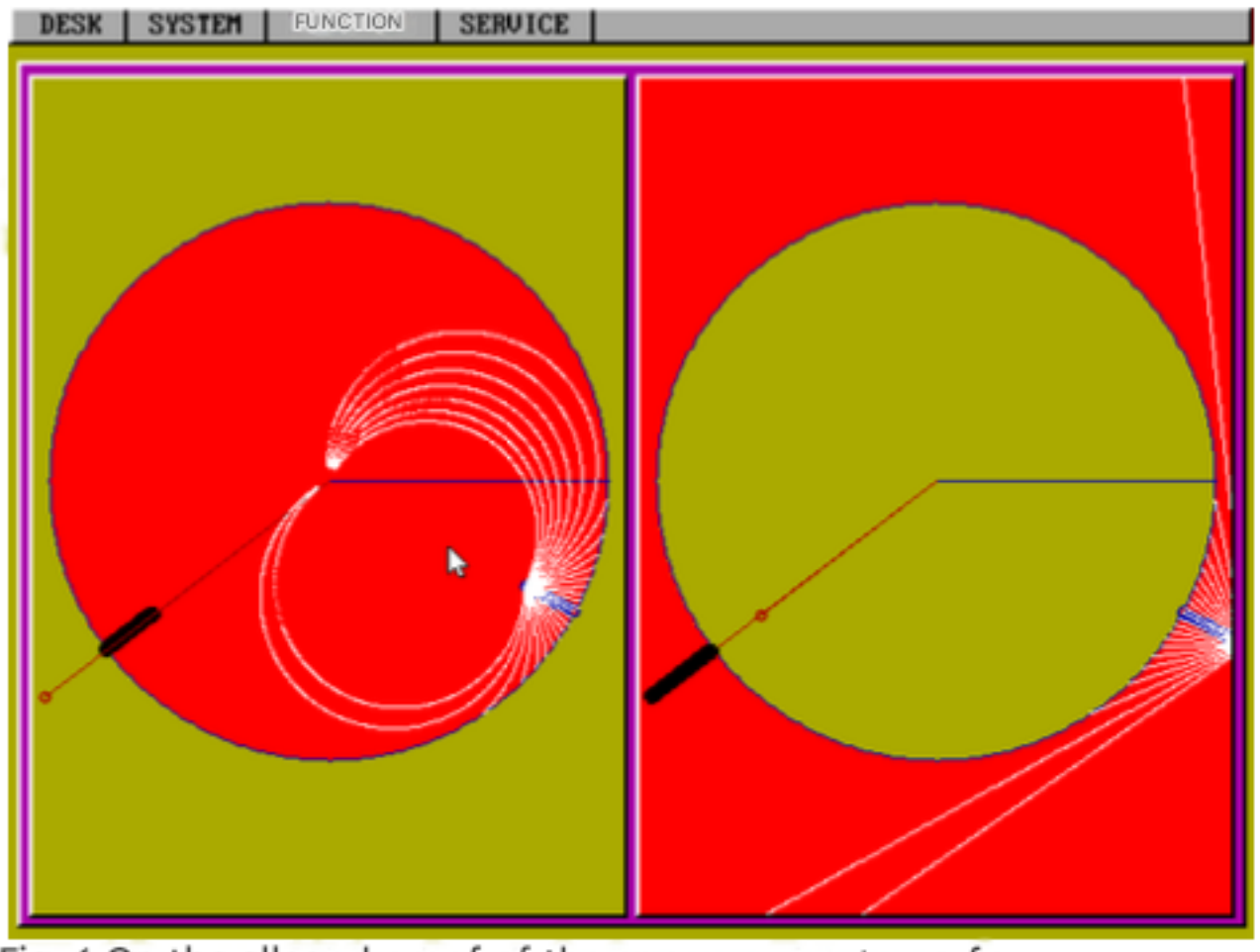

Fig. 6 On the alleged proof of the convex curvature of the earth's surface: At this distance, in both images no light rays can pass from the top of the mast (right) into the eye of an observer (left).

The mast of a sailing boat has appeared in the horizon of an observer (Fig. 7, left).

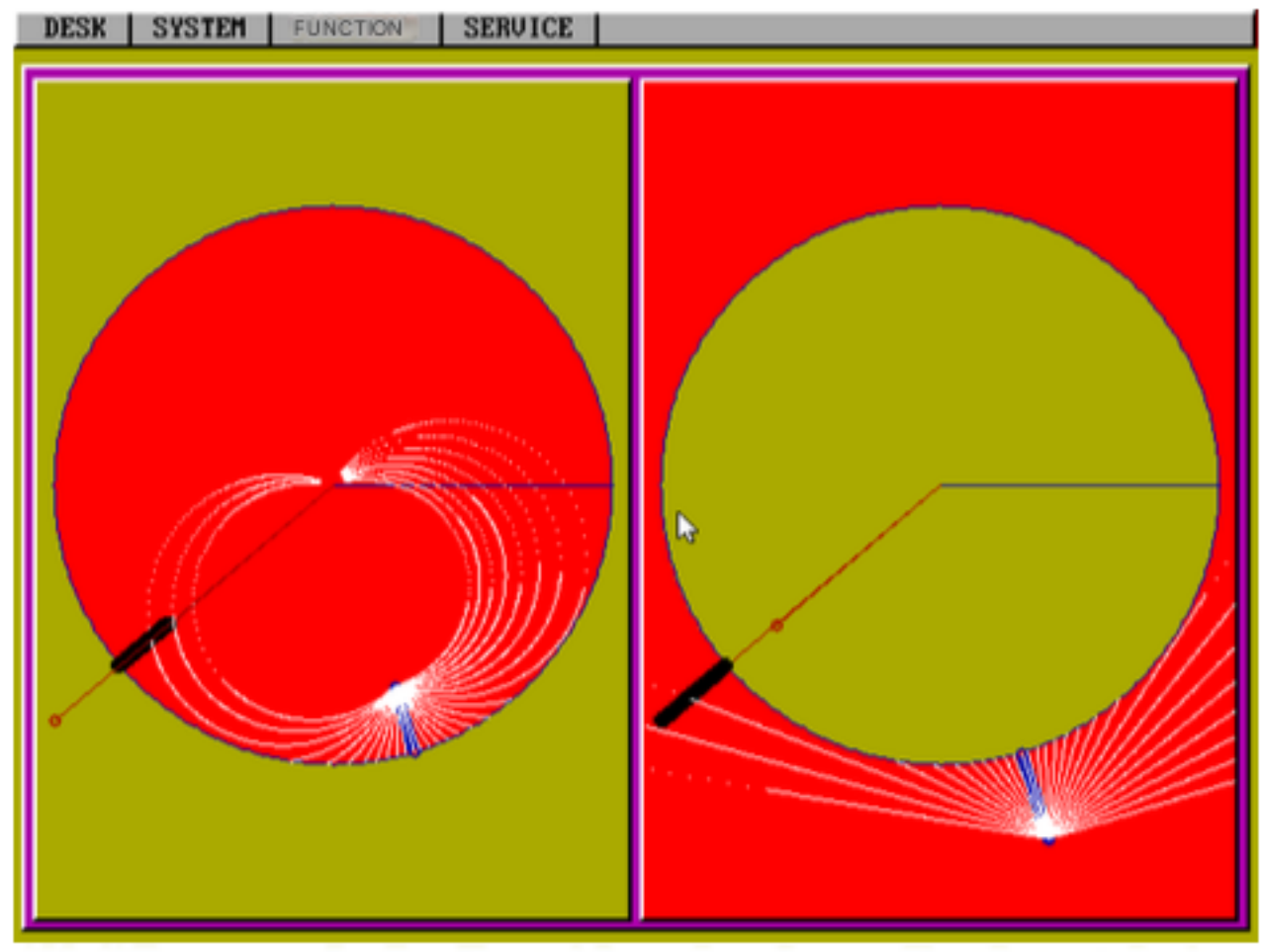

Fig. 7 Only when the sailboat has come close enough does its sail become visible on the horizon. This is the case in both pictures!

IV Clarification

Around 1962, a physicist, Mr. Braun, published a theological-physical work entitled "The Three-Storey Universe of the Bible." On the one hand, he continued medieval questions, but on the other hand he reversed them: How is it possible that God rules the world, although according to today's usual representation of the universe, no place can be specified where he resides, from where he gives his orders? In the early Middle Ages, this seemed clearer. There, he was assigned the place outside the sphere of fixed stars, from which he could instruct the angels to drive the universe and everything in it. And because of the many friction losses from the outside to the inside of the earth,

his mission here may be somewhat distorted. For medieval people, this seemed to answer a burning question: How is it possible that the benevolent God controls everything that happens and yet allows plague, hunger and war? After the Copernican Revolution, this argument was interrupted because the earth was wandering around the sun somewhere. That was what made the Copernican Revolution so explosive!

Braun placed the entire universe in the earth's sphere and supposedly made it possible for God to rule the world from the center. As a physicist, he had to prove the new geometry of the universe and he discovered that there is a simple transformation that transforms the usual image of the universe into a hollow world. He called the transformation the "transformation of the inverse radii"; mathematicians have known it for much longer than the inversion of the circle or sphere.

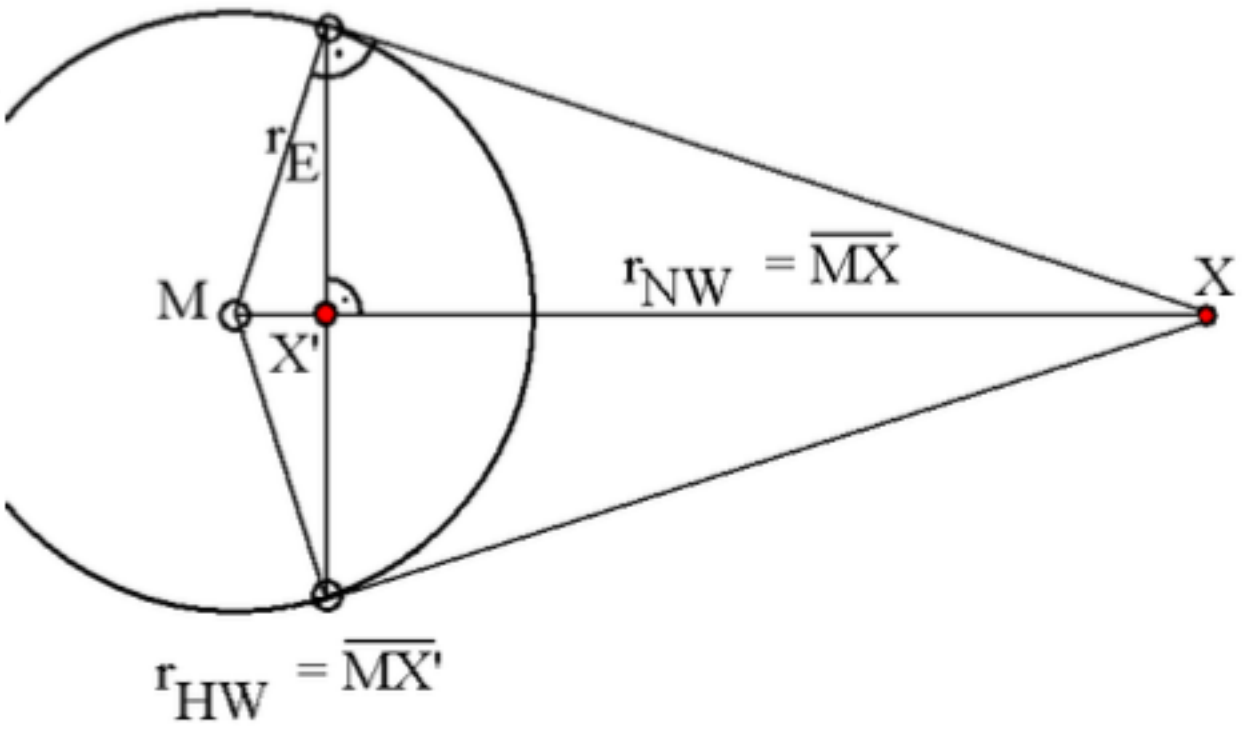

Fig. 8 Regarding the transformation formula: If X and X' are point and image point to each other, then their positions are related according to the Pythagorean theorem.

It satisfies the simple transformation formula (Fig. 8):

$$r_{HW} \cdot r_{NW} = r_E^2$$

Let's look at some consequences of this transformation:

1. A straight line through the center of the Earth remains such a straight line even in the hollow earth (Fig. 9).

   Result: Bodies fall vertically to the earth

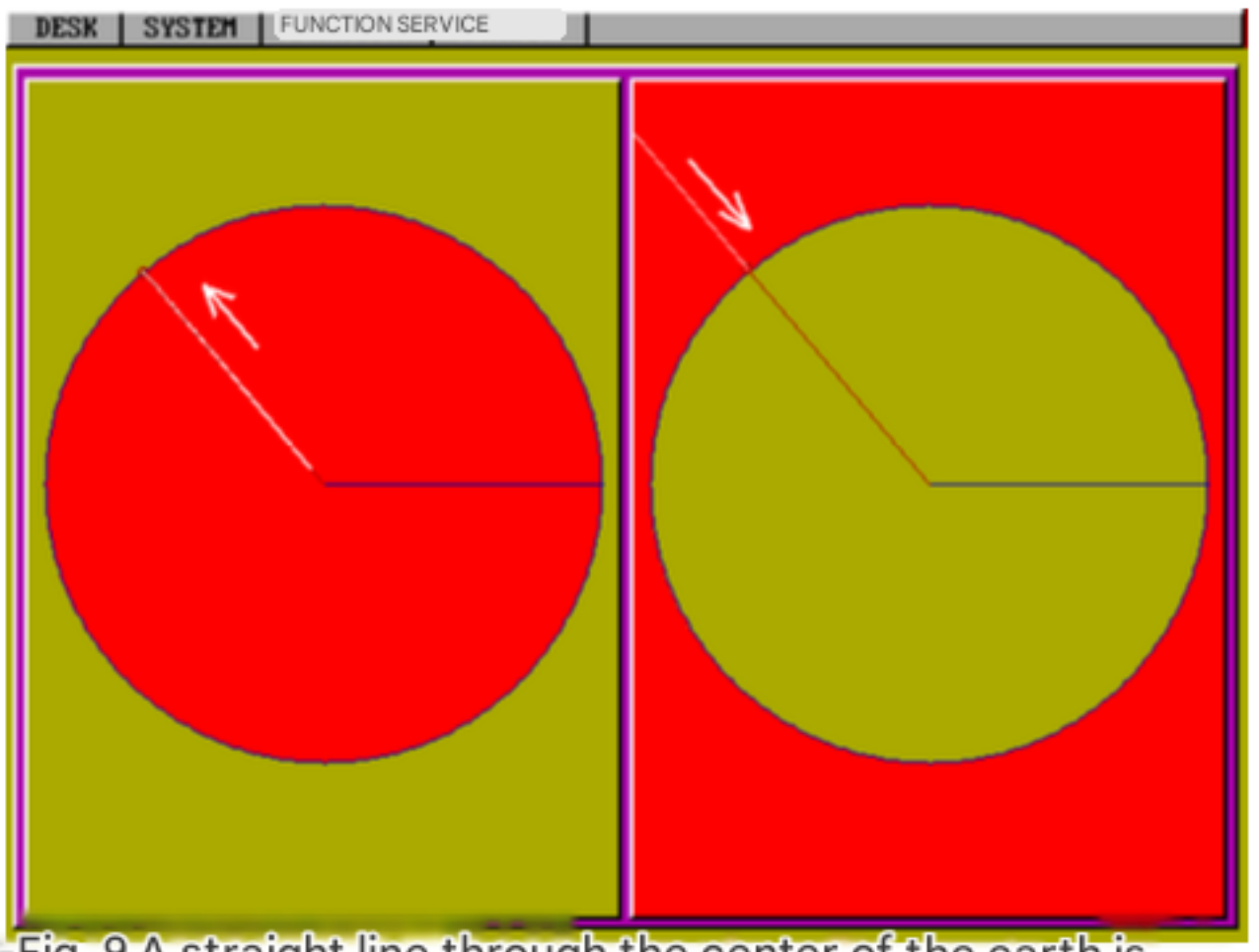

Fig. 9 A straight line through the center of the earth is mapped onto itself by inversion at the circle. The direction of the arrow indicates a falling stone.

2. A straight line in the normal world that does not pass through the center becomes a circle through the center of the hollow sphere in the hollow world. This is how light spreads. (Fig. 2, 3, 4)

Consequence:

- day and night
- There is also a horizon in the hollow world

3. Points on the Earth's surface remain unchanged.

4. A movement away from the earth into infinity (Fig. 10) corresponds in the hollow world to a movement towards the center of the universe. Just as the propagation of light into infinity along a straight line takes an arbitrarily long time in the usual picture, it also takes an infinite amount of time to reach the center of the hollow world.

Consequence: A world horizon (edge of space) is also possible in the hollow world. The center of the hollow sphere corresponds to it.

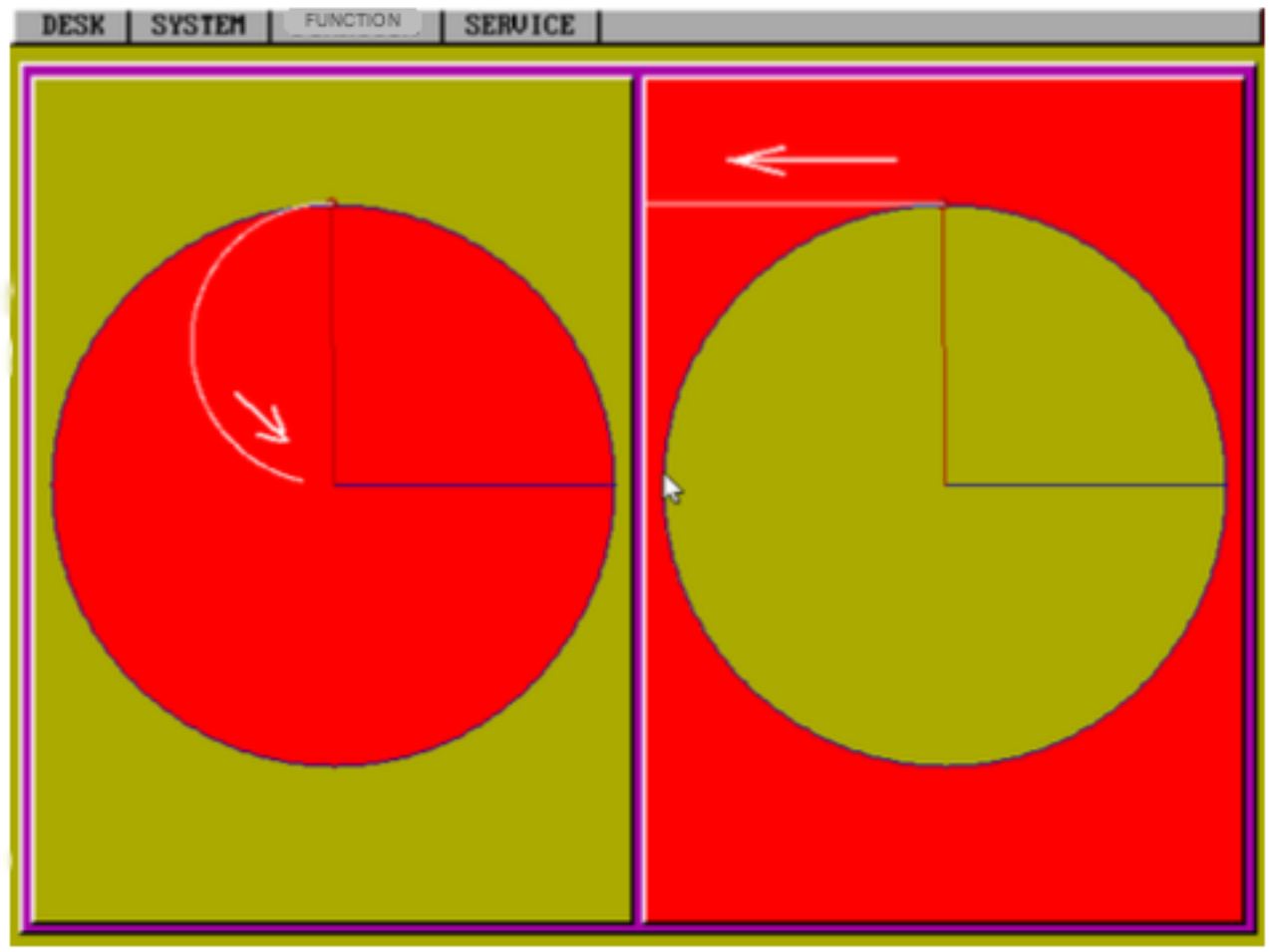

Fig. 10 A beam of light is emitted from the Earth's surface to the "edge of space".

5. Unlike Lang, the "earth's interior" is not a spherical ring around the universe (Fig. 1), but extends outwards into infinity.

The interior of the earth (in the hollow world outside the hollow sphere) is filled with magma and the iron-nickel "core" of the earth's interior. Drilling a channel through the "interior" of the earth is practically just as impossible as in the normal world. Theoretically it would be just as possible (with temperature-resistant tools), because as the distance outwards from the earth's surface increases, all distances between two points or atoms grow beyond all limits. It is nothing unusual for mathematicians to imagine "infinity" as a point, after which the drill would reach the earth's surface again from the opposite side.

Euler had already had such an idea for the solid sphere in the 18th century. He had provoked Voltaire's ridicule because of an error in the sign. It was Voltaire who corrected it to a periodic pendulum motion if one imagined a stone falling frictionlessly through the borehole. Slightly more realistic versions of such a "gravitational pull", supposedly without the necessary artificial driving force, avoid the path through the earth's interior. Both paths look different in both descriptions, but correspond to each other. In particular, both images indicate the

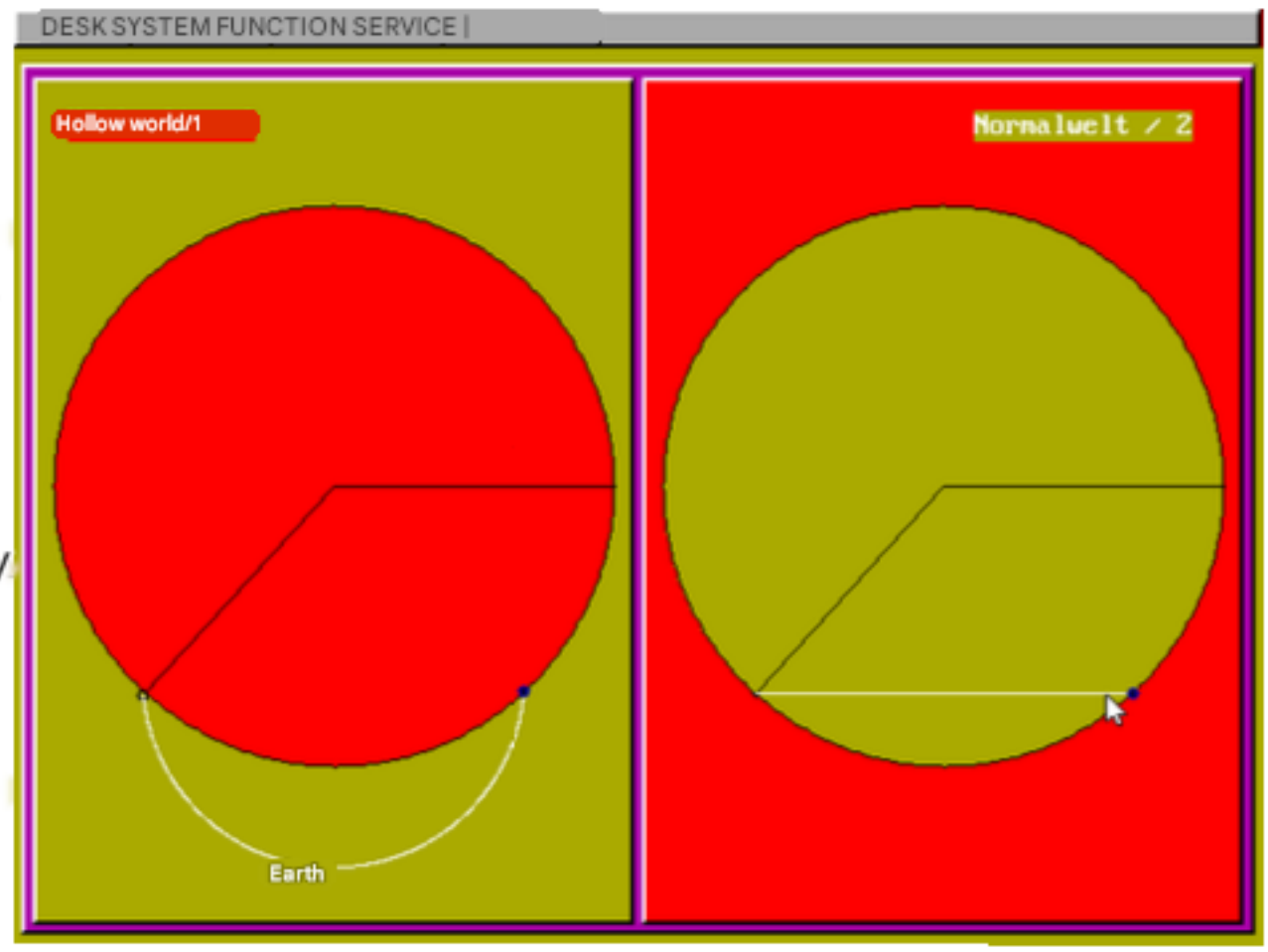

Fig. 11 Orbits in the "Eulerian gravitational pull": Despite different geometry of the orbit, both images predict the same destination.

future at the same point on the Earth's surface (Fig. 11, 13).

6. Spheres or circles in the conventional image remain spheres or circles:

Consequence:

- The sun and moon remain spheres; they have a very small radius because they are close to the center of the hollow sphere
- the planetary orbits are still approximately circular.

7. Concentric spheres or circles of the normal world merge into concentric spheres or circles.

Result: satellite orbits (Fig. 12)

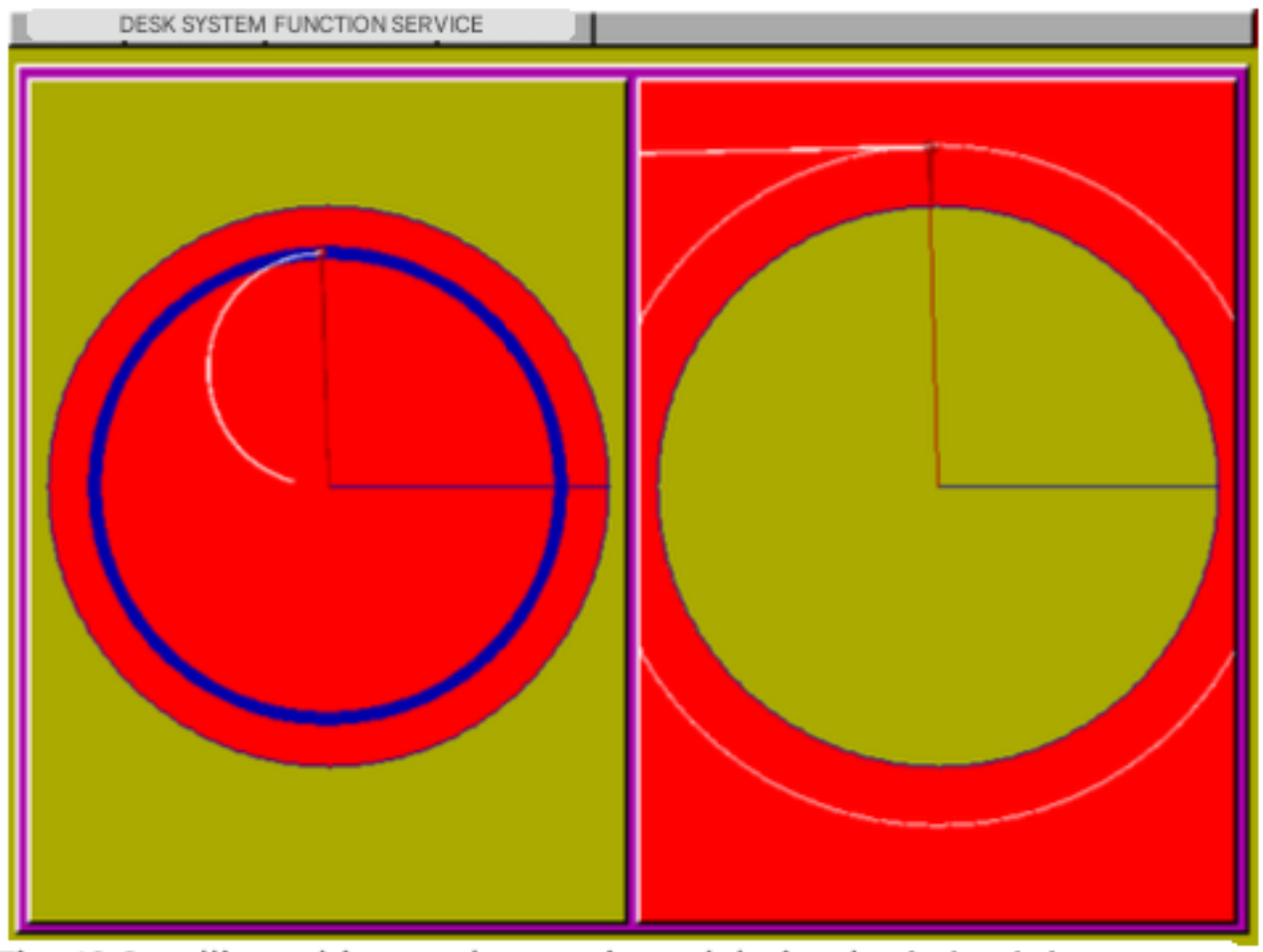

Fig. 12 Satellite orbits are (approximately) circular in both images. Hypothetical orbits are also shown for the case of gravity being switched off.

8. All scales are location-dependent: Near the hollow sphere center, all distances become smaller (compared to those in the normal world), while in the "interior" of the earth they become larger and larger. However, such a statement only makes sense if one assumes that the normal world is correct and compares it with the normal world. The hollow earth theorist does not notice this, because not only the distances between the atoms or the size of the people or stars changes, but also the standards by which they are measured.

Consequence:

- Size of sun and moon in the range of centimeters
- Space travel inside the hollow sphere: the astronaut only sees the part of the earth's surface from which light can reach him. The path of light is reversed to that of a light source at the position of the spaceship that shines on the earth's surface and can thus be made visible. Space travel is just as difficult and time-consuming as in the normal world, because the dimensions of the spaceship also shrink when it approaches the stars near the center of the hollow world.

9. In the hollow earth picture, a channel through the earth's center (Fig. 13) first leads radially outwards to infinity and then comes from infinity on the opposite side radially inwards back to the opposite point on the earth's surface (cf. Euler's gravitational pull).

10. Energy production of the sun: Most of the energy goes to "infinity", in the hollow earth picture, towards the center. Relatively little of the radiated energy reaches a part of the earth's surface. A relatively weak energy source would be sufficient for this alone.

11.Heisenberg uncertainty principle:

12.The forces must also change with the geometry.

This transformation of forces then reveals that, for example, the force of gravity is directed outwards, into the "interior" of the earth. Newton's laws also have to be changed: according to the law of inertia, forces now ensure a movement that deviates from a circular path (instead of a straight line). The forces acquire different spatial dependencies. For free fall, for example, one obtains a complicated equation of motion instead of the simple relationship. Prof. Sexl showed it at the MNU conference in 1983: it filled an entire DIN A4 page.

Because it is a purely mathematical transformation of the conventional picture, there can be no deviations between observations or experiments and the predictions of the hollow world theory. Every experiment confirms the (co-transformed) laws of the hollow world theory. Neither the hollow world nor the normal world theory is falsifiable.

An experiment cannot decide whether the normal world or the hollow world is correct: both are equally correct.

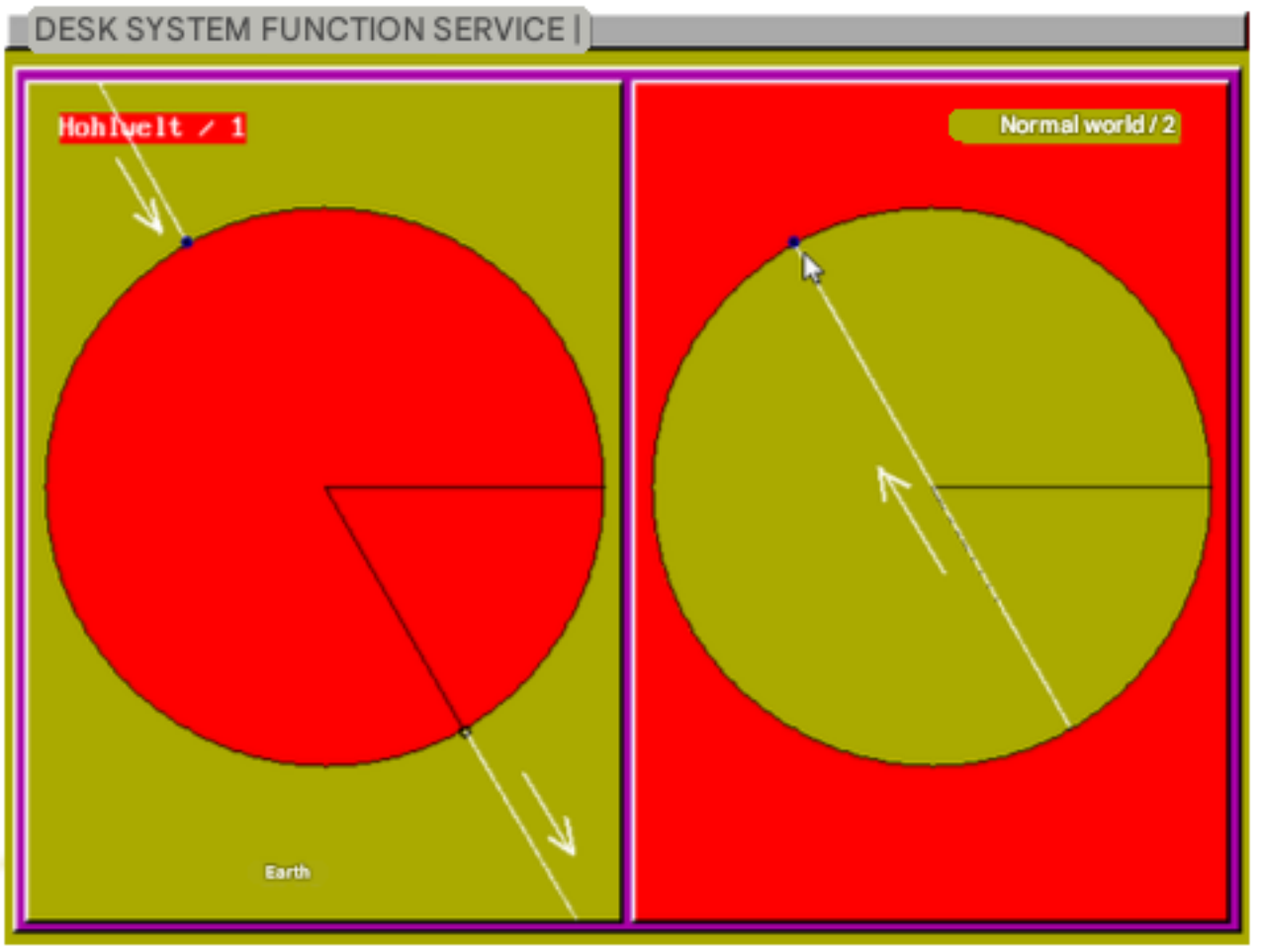

Fig. 13 Paths of the "Eulerian gravitational pull" through the center of the Earth: arrows indicate the direction of movement.

V Comparison of Heliocentric and Geocentric Systems

Similar relationships between two different descriptions are known in connection with the heliocentric and geocentric systems. I will now show you both systems side by side on the screen - simplified by the fact that the rotation of the earth is not taken into account. The geocentric system then describes the planetary motion as seen by an observer who is resting somewhere on the earth's axis.

The geocentric system (Fig. 14) appears to be extremely complicated. It is surprising how Ptolemy or his successors were even able to understand the system and get a mathematical grip on it. They succeeded so well that up until the 15th/16th century the planetary motion could not be predicted so badly.

In contrast, the heliocentric system (Fig. 14) impresses with its high level of symmetry, transparency and simplicity. Only with its help was it possible to clarify the laws governing our planetary system. Only in this way - after Kepler had replaced the circular orbits with slightly elliptical orbits - was Newton able to find the force of gravity and finally predict the movement of the planets. This is what distinguishes the heliocentric system from the geocentric system.

Is it "more correct"? The movement of the sun and the earth in both systems (screen) looks

If one planet is "switched on" after the other, you can see similarities. If you connect several planets in both systems with a polygon (Fig. 15), you can see that the central body is different in each system, but the relative position of all the planets and the sun to each other is identical in both systems at all times! I usually formulate it like this: Heliocentric and Geocentric systems are, kinematically "equivalent".

This has to be the case: For the screen representations, I started from the heliocentric system and carried out a purely mathematical transformation with some sines and cosines. Both systems must therefore be kinematically identical!

From the point of view of today's formulation of physics, it is of course possible to distinguish whether you are on a stationary earth or an accelerating earth: today's physics is normally formulated for an inertial system. In such a system, the sun is approximately at rest.

Compared to this system, an observer resting on the earth notices additional forces, so-called inertial forces or apparent forces (e.g. a force that is called centrifugal force in the earth's inertial system; (demonstration: centrifugal force when cornering in a car). If additional inertial forces occur in addition to forces that appear in an inertial system, you know that you are in a reference system that is accelerated compared to the inertial system. In a reference system in which the earth is at rest, i.e. in the geocentric system, you will observe additional forces that do not appear on the screen in the purely kinematic view. With a correct mathematical transformation from the heliocentric system to the geocentric system, these forces arise automatically as a result of the transformation of the forces that must also be carried out. If you carry out this transformation of the forces, then the the reference systems are also "dynamically equivalent".

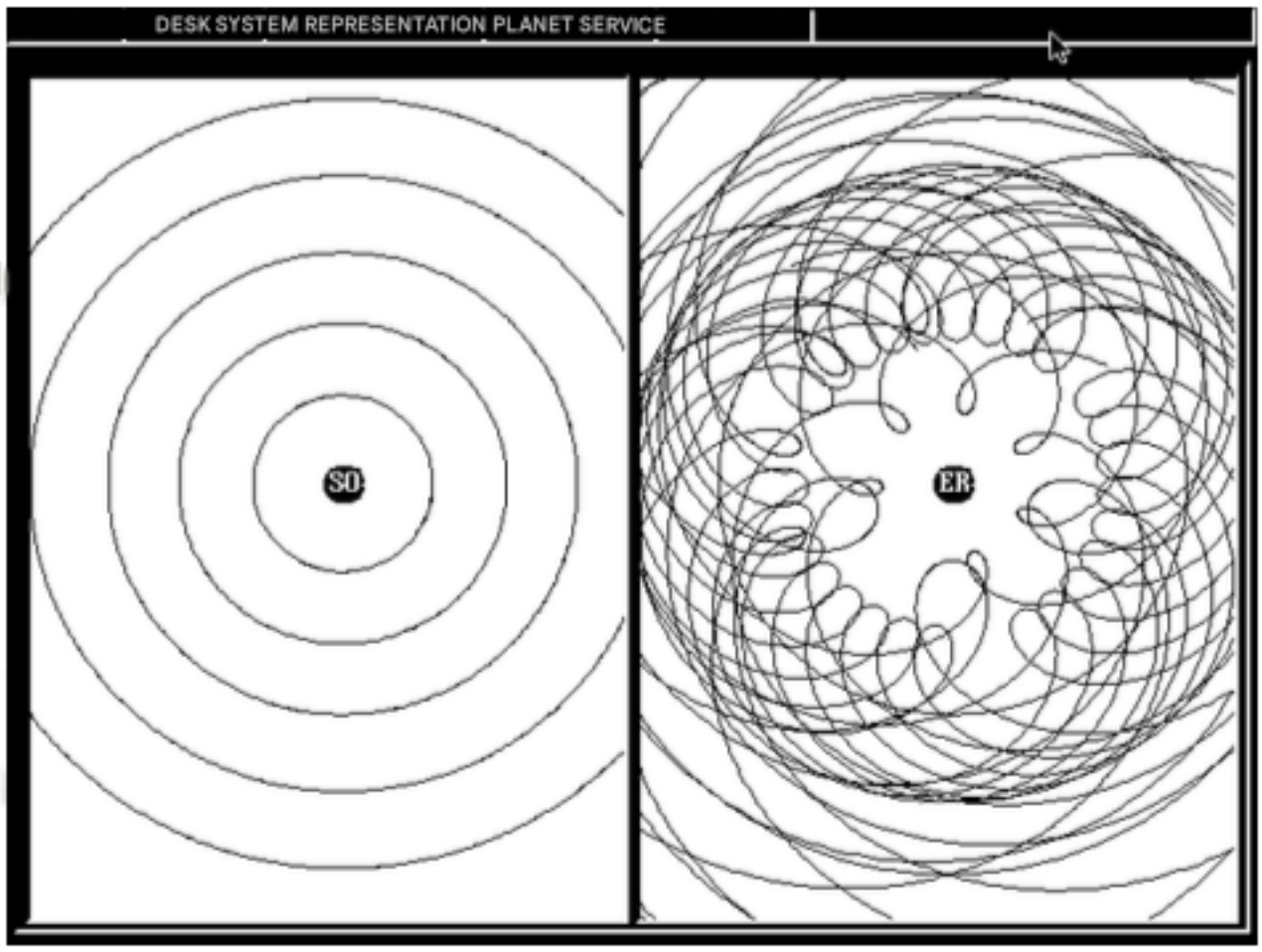

Fig. 14 Heliocentric and geocentric system simulated on the screen with the program HELIOGEO.

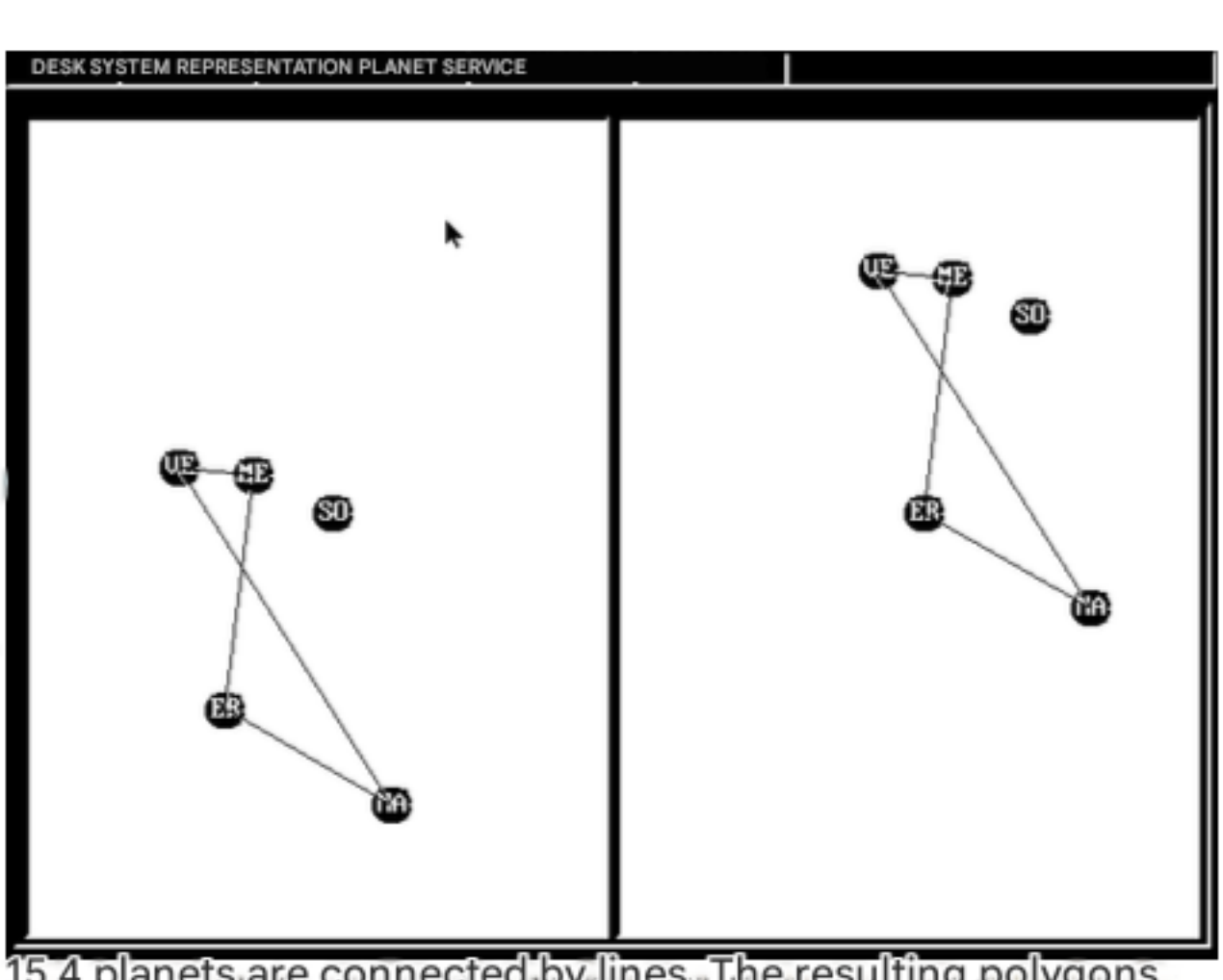

Fig. 15 4 planets are connected by lines. The resulting polygons are constantly changing. However, they are always the same in both images of the planetary system.

In the same sense, the normal world and the hollow world are "kinematically equivalent", and, if If the forces are correctly transformed, they are also dynamically equivalent". In short, we can say that the heliocentric and geocentric systems are equally correct, just as our normal world and the hollow world are equally correct.

VI But what are the reasons why we reasonably prefer the heliocentric system or the normal world?

a) Simplicity:

It has often been the case that theologians or philosophers were consulted when physics alone was no longer of any help. The medieval bishop, physicist and theologian Nicholas of Oresme made the postulate: "Physics is simple". This claim is often related to "Ockham's razor": of two explanations of a situation, the simpler is to be preferred. With today's knowledge, this makes sense: without the simple structure of circular or elliptical orbits, their regularity would not have been recognized, and Newton would not have been able to discover the physical laws of planetary motion.

Without the simple structure of the normal world, the hollow earth theory might not have been able to explain even the laws of free fall. It would certainly not have been possible, for example, to control the Saturn rocket so that the lunar lander would have reached the moon. Since straight lines are easier to handle than circles, it might not have been possible to correctly interpret even simple phenomena such as the appearance of a sailboat on the horizon.

In principle, however, none of this can be ruled out. A physics genius could possibly have achieved this.

b) Freedom of choice

If one does not have any non-physical arguments (such as supposedly religious ones in the Middle Ages), the existence of the human observer is the only argument that the earth should be at the center of the universe. In the same way, it would be justified to consider the moon as the center of the world. The choice of the earth as the center appears to be purely arbitrary, while the choice of the sun is more likely to be based on the fact that it is roughly located in an inertial system. (We now know that it is not the center of the world and is not at rest in an inertial system either.) The most favorable choice of reference system would be an inertial system, if such a system existed.

In the same way, it can only be purely arbitrary if one sees the earth as a hollow sphere. It would be just as correct to see the moon as a hollow sphere in which the earth orbits, or even to assume that there are 30 "men inside" this tangerine (show!) (this is how Prof. R. Sexl got a laugh in his lecture at the MNU conference in Stuttgart in 1983 with his Austrian dialect).

Other transformations are conceivable in world systems in which the earth would be a flat disk, for example. Such arbitrariness is unsatisfactory.

c) symmetry

In the normal world, no point in space is distinguished. The validity of conserved

conservation laws, in this case the law of conservation of momentum. As one of the fundamental conservation laws, it governs many processes in the world. Such a conservation law will certainly not exist in a hollow world in which the center of the hollow sphere is clearly defined. Other laws could be formulated as a replacement, but these would again be very complicated.

d) clarity

It has been claimed that the normal world concept is more intuitive than the hollow world idea. We grew up with the normal world concept and spontaneously think in this way, even when it produces results that are not intuitive at all. Or do you think it is more intuitive that the sun is millions of kilometers across, while you only see it as a small disk in the sky?

I don't think this argument holds water.

e) Science theorists give another reason:

Of two theories, the one that is easier to falsify should be preferred. This means the following: It is known that in the natural sciences, in the strict sense, correct hypotheses cannot be proven, but only incorrect hypotheses can be refuted (falsified). When all attempts to refute a hypothesis have failed, the opinion that the hypothesis is correct gradually prevails. The normal world is characterized by the validity of higher-order symmetries, e.g. the isotropy of space. These impose such strong restrictions on real processes that many things can be ruled out without complete knowledge of the theory. They determine, so to speak, the scope of possible processes. Deviations from this would be easily recognizable. Individual phenomena, on the other hand, could also be explained with newly constructed hypotheses that could lead to contradictions in other places. If an individual hypothesis fails, one would tend to correct it alone, without questioning the system as a whole. Symmetries help to rule out certain individual hypotheses from the outset. If experiments then continue to contradict the predictions of the theory, one tends to reject the whole theory. An example of this was Kepler's assumption (before Newton discovered inertia) that the planets were whirled around the sun by "magnetic forces". He did not yet know what a force in the modern sense actually is. His hypothesis became invalid after Newton had developed a complete theory of mechanics in which today's concept of force was formed and in which the force had a completely different task, namely not to move a planet, but to force it from its linear (inertial) movement onto a circular orbit.

Another example is the history of the theory of relativity. In the 19th century, certain phenomena in the theory of electricity required certain correction factors of the form √ 1 - (v/c)2 with the speed of light c and the speed v of the light source or a light receiver. To explain this, hypotheses were put together about the existence of an invisible "ether" in which the light was supposed to propagate. New experiments always required new work. Perhaps it would have been possible to put together a hypothesis as to why none of the experiments could prove such an (allegedly existing) ether. In contrast, Einstein made some simple symmetry requirements (the speed of light c is constant and space and time are homogeneous and isotropy) and was thus able to explain all observations without an ether. Deviations from the framework provided by his "theory of relativity" would then have been easily discovered and would have forced a modification of the theory of electricity. With the help of the symmetries of RT, the E-theory has become easier to falsify.

Thus, the easier falsifiability of hypotheses in the normal world speaks in favor of the application of this picture of nature.

VII No trivial relativism!

I would like to offer a warning. When I say that the methods of description mentioned are all equally correct, but that certain ones are to be preferred for important reasons, I am not advocating a relativism that declares all methods of description to be arbitrary. It is quite clear that we are only dealing here with methods of describing nature; there is agreement about the facts that are to be described, about the outcome of all experiments, about all observations and predictions. Ambiguity only exists in the figurative description of the geometry of the world.

A similar phenomenon is also known from mechanics. The movement of point masses can be described by other mechanics in addition to Newtonian mechanics. In Newtonian mechanics, forces play the decisive role. In other formulations of mechanics (e.g. the mechanics of the conservation laws or Hamiltonian mechanics) the concept of force does not appear at all. Nevertheless, these are largely equivalent to Newtonian mechanics. (And there are bridges between the different mechanics, which then, for example, contain forces again.)

VIII Wave-particle duality?

As is well known, light or matter can be described by the propagation of waves or a stream of particles. In both cases, these are images of nature (models). Can we also say that these are different, equally correct images of nature?

Not at first, because none of the images (models) alone is sufficient to explain the phenomena. So today, instead of "both and", the view of "neither - nor" has become more popular in some areas (e.g. in the sense that an electron is neither a classical particle nor a wave).

However, a correct quantum mechanical formulation can be constructed starting from the wave picture or starting from the particle picture; the initial picture must then be modified in the correct mathematical theory (quantum mechanics) (and the "waves" are not realistic waves, but only aids for calculating probabilities for the outcome of measurements).

VI Literature:

R. U. Sexl, The Hollow Earth Theory, MNU 36, pp. 453-460, 1983

(Based on the Tübingen MNU lecture by Prof. Sexl. The original literature can also be found there.)