a logical theory of the moon

Even today, most university textbooks and other books still say roughly this about the Moon: The Moon, our single natural satellite, broke away from the Earth or, according to the most recent discoveries, hurtled up here from space a few billion years ago. It is round in shape and orbits the Earth at a distance of approximately 380.000 km. Its specific density is surprisingly small, 3.3 g/cm³; spectrographic analyses show it to be cold; its mass is insufficient to allow an atmosphere. Its surface is marked by a great number of craters that range from a few millimeters to several kilometers in diameter and have mostly been formed by volcanism and the remainder by meteoritic impact.

I wish to adduce some other available information questioning the validity of such descriptions.

I can justifiably disbelieve the theory that the Moon originated from gases circling round the Sun at a distance of some 150,000,000 km. Even less believable, however, is the hypothesis that the Moon »sailed« into our solar system after a star in our galaxy had exploded. Taking the approximate mass of the Moon and the speed at which this mass must have moved and then trying »to satellite« such an object into the Earth's orbit gives a result which makes you more than just suspicious – unless there were some kind of »braking« or »orbiting« engines on the Moon. We know there aren't any, and while it is somewhat conceivable that the Moon got orbited it is inconceivable how its orbit round the Earth could have gotten as symmetrical as it is today. For the same reasons I am convinced that the Moon, through an explosion of gaseous masses, broke away from the Earth and became its satellite in an orbit proportional to the mass which the Moon had at the time and to the speed which the Moon acquired at the explosion. I can quite safely maintain that its original orbit must have been rather elliptical and that its surface was initially not cool or formed. In later paragraphs I will explain why the majority of experts disagree with this theory and how in a span of many million years the distance between the Moon's apogee and perigee could have decreased, that is how the elliptical orbit got shorter to become almost round. Let me also emphasize that at the beginning the Moon, with its elliptical orbit, must have had a tremendous impact on the formation of the Earth's geological structure.

I find claims about the volcanic and meteoritic origin of the lunar craters very naive. If we could transfer one of the Earth's active volcanoes to the Moon and watch it work, we would be astonished: however active down here, it would nevertheless refuse to erupt up there. As soon as the glowing volcanic matter came into contact with the vacuum surrounding the Moon's surface, the gases from the matter would immediately start to vaporize, and since vaporization results with cooling, the volcano would calm down in a relatively short period, or even – depending on its composition – cool off.

Let us now consider the idea that all those billions of craters were caused by meteoritic bombardment through several million years!

It is common knowledge that meteorites, comets and any other space objects conform to certain laws of physics and gravitation. These laws make it practically impossible that a body of whatever kind, moving through space, should fall vertically upon another body that has a gravity of its own, because the trajectory of its motion is tangential to the surface of impact, due to its own kinetic energy. Thus there is no way that a comet's or meteorite's fall on the lunar surface could result in a totally round crater rather than a lengthy furrow ending in a heap of what has remained of the projectile, i.e. of the meteor. Besides, we know that some of the lunar craters have a diameter of 150 km or more. If we calculate the kinetic energy of a projectile whose specific density is about 5 g/cm³, diameter 100 km and speed possibly as high as 200,000 km/h, we find the mass of the Moon several times too small to influence the trajectory of such projectiles, let alone attract them. Let us now assume, just for the sake of argument, that the projectile was fired and guided toward the Moon with extreme precision, so precisely that the gravity of the Moon and the Earth notwithstanding it hit the lunar surface at an angle

of 90 º. If we measure the crater originating in this dreadful kinetic explosion we find that its depth is four to five times greater than its diameter, and this is not in harmony with the actual craters on the Moon: their diameter is several times greater than their depth. Let us add the NASA data about the average frequency of meteoritic »rain« and we shall see that the Moon should be several times older than the Earth to have had the time to experience a bombardment of so many meteorites. And even if this had occurred, the larger part of the lunar surface should then be so furrowed and plowed that explorers could find a symmetrically round crater only as an exceptional and isolated phenomenon.

Before I start developing the only theory about the Moon that I find acceptable I would like to draw my readers' attention to certain anomalies that have excited scholarly circles for decades.

First, the Moon's »weight«. Assuming that the weight of one cubic meter of lunar mass equals, on the average, the weight of one cubic meter of terrestrial mass and then attempting to calculate the volume and weight of the entire Moon gives a result hard to believe! The Moon is simply too »light«. Since the computation of gravity balances involves mass, velocity and distance as the basic components and since we know the distance and the velocity of the Moon, we can calculate the weight of the Moon in its entirety. Calculating its average density by the same method, we get another staggering result: the average density of the Moon is approximately 3.3 g/cm³, which is rather far below the one of the Earth, namely 5.5 g/cm³. These results entail the following two inferences:

1. The Moon is composed of materials that are unknown to us and have an unusual specific weight.

2. The Moon is literally hollow.

If neither of these is accurate, then the gravity calculations show that the Moon's orbit from the Earth should be much different. There are other incongruities:

- The explosive glowing light appearing sporadically on some parts of the Moon.

- The phenomenon referred to as lunar »domes«, cup-shaped protuberances 200-800 meters in diameter.

- Traverse ridges which are continually being discovered and cannot have originated as a result of geological faulting in the Moon's crust, because the faultage wave always demolishes the previous longitudinal ridge and builds a new one traversely to its own direction.

Can these as well as many other incongruities which have been baffling scientists for years be explained by a single theory of the Moon? We still do not know how large space really is; what we do know, however, is that the same laws of physics and logics apply even in its farthest corners. That is why I have chosen to name the theory that I will propose in the following paragraphs »a logical theory of the Moon«.

I disagree, as I have said, with the hypothesis that the Moon »flew in« from an orbit around the Sun. I believe that using the energy of explosive gaseous matter the Moon tore away from the Earth and became its satellite orbited proportionally to the mass and velocity it acquired in the explosion. Thus we were given a moon composed of a white-hot mixture of gases and other matter very similar to the one composing the Earth. At the very beginning there was just one difference between the two, but it was a decisive one and would condition the essentially different ways in which the structures of the Moon and the Earth were cooled and formed. The mass of the Moon was smaller than the mass of the Earth from the very start! This is why the Moon never had an atmosphere: all the gases reduced from its surface vanished into space owing to its insufficient gravity. So the Moon, due to its smaller mass, was cooling more quickly than the Earth. The process of the Moon's cooling was further accelerated by the swift evaporation of gases. We know that evaporation causes the evaporating surface to cool off, therefore we can assume that the Moon relatively early acquired a thin cool crust. During this period, lasting a few million years, enormous quantities of gases evaporated from the lunar surface and slowly reduced the overall mass of the Moon. Consequently, the orbit of the Moon was slowly changed. The shape of its orbit was changed from a very elliptic to an almost round one – because the evaporation process was partly influenced by the gravity of the Earth.

As the Earth's influence on the Moon and its masses depended on the distance and velocity of the lunar motion, the Earth functioned with respect to the Moon as a kind of regulator enhancing the emission of gases at certain points of the orbit and thus asymmetrically changing the mass and the velocity. A consequence of this was a slow, several-million-year change of the shape of its orbit from an elliptic one to an almost round one, at whose every point the effect of the gravity of the Earth is almost identical.

To better understand the subsequent events and their consequences, let us have a look at how the terrestrial crust was formed. A very high temperature initially conditioned an almost total homogeneity of the glowing masses. Later, the constant emission of thermal energy caused the temperature of the crust to drop and thus destroyed the homogeneity. The force of gravity therefore started to intensely attract any specifically heavier matter toward the axis of the Earth's revolution and thereby to push out of their environment specifically lighter gases, which were thus gaining a kind of thrust force, a buoyant force driving them to the surface. The gaseous masses quickly evaporated from the surface and enhanced the cooling off, but only initially; unlike the Moon, whose gravity was too weak to hold them, the Earth would not let the gaseous masses leave: they gathered round the surface and due to their own weight created the atmospheric pressure. This pressure further slowed down the evaporation and de-heating while at the same time shielding the Earth as an extraordinary thermic insulator. The emission of gases and creation of an atmosphere went on unimpeded as long as no partly formed and cooled-off crust existed on the surface.

Let us now see what happened when the crust began to form, and how the formations of gaseous masses at a greater, uncooled-off depth came to the surface and merged with the atmosphere. Huge quantities of reduced gases had a great buoyant force and created classical volcanic formations. Some of these are active even today. What, however, happened with the smaller quantities of gases whose buoyant force was not strong enough to cause a volcanic eruption but which on their way into the atmosphere ran into a thin solidified crust?

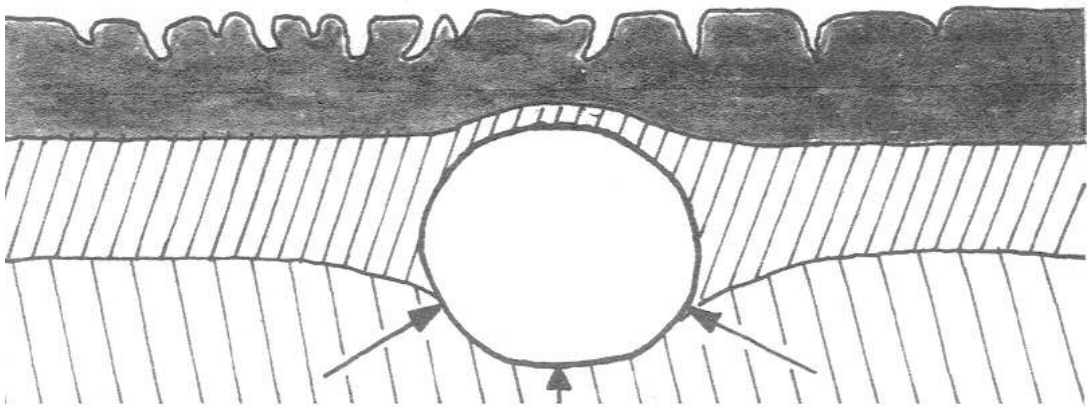

Fig. 1 – a bubble of reduced gas is traveling from hot layers toward the surface of the Earth.

Figure 1 shows one of the smaller bubbles of reduced gas buoying up to the surface from a layer in the glowing-hot depth. As the »temperature breathing« – expanding and contracting of the terrestrial crust – was intense and rapid in frequency, a number of cracks would appear in the crust and allow odd bubbles to come into contact with the atmosphere and merge with it quickly, but not explosively, due to the force of their own pressure (Fig. 2).

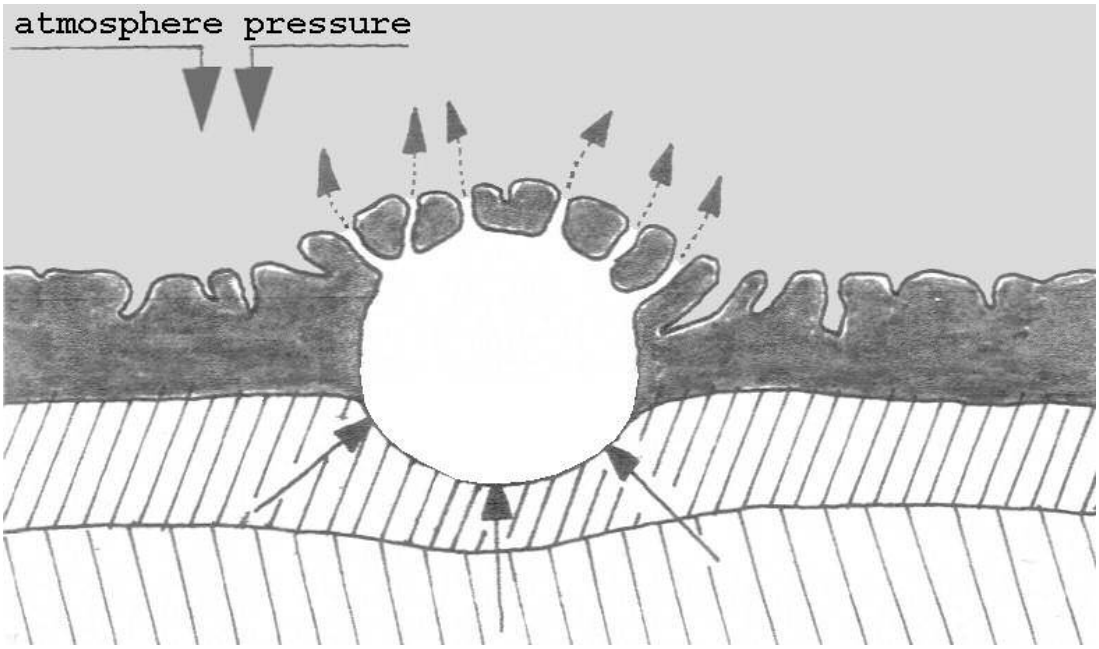

Fig. 2 – the gas bubble is traveling through dense and merely partially glowing-hot layers toward the surface surrounded by atmosphere.

The same frequent dilatations of the crust were the reason why the void created by the expulsion of the bubble was later filled up with matter either from the side and the top or from the lower, less hardened layers.

In certain periods of cooling off there must have been billions of such bubbles, varying in size, from a few millimeters to tens of kilometers. Some are still found today in various rocks, minerals and resins lying deep under the terrestrial crust.

At the surface, on the other hand, immense gravity forces, seismic movements and temperature differences contributed to the complete expulsion of all the bubbles into space over a period of a many million years. (The origin and essence of the magnetic field shielding the Earth from cosmic rays will for lack of space and their indirect connection with my theory not be dealt with in this article.)

And now from the terrestrial goings-on to the analogous ones on the Moon.

The Moon, whose mass was smaller, was cooling off more quickly than the Earth, and its cooling was accelerated by the smaller gravity of the Moon in such a way that the surfacing gases evaporated in a vacuum, which means that they evaporated much faster than they would have if they had been affected by atmospheric pressure.

A faster cooling entailed a faster forming of a thin cold crust, so that the process of reduced gases being expelled from the deep interior could not last even remotely as long as on the Earth. Yet the inside of the Moon and the gases therein likewise proceeded to cool off toward the center.

Figure 3 shows a bubble of reduced gas moving through dense and only partially cooled-off layers toward the surface, where a thin but firm lunar crust has already been formed.

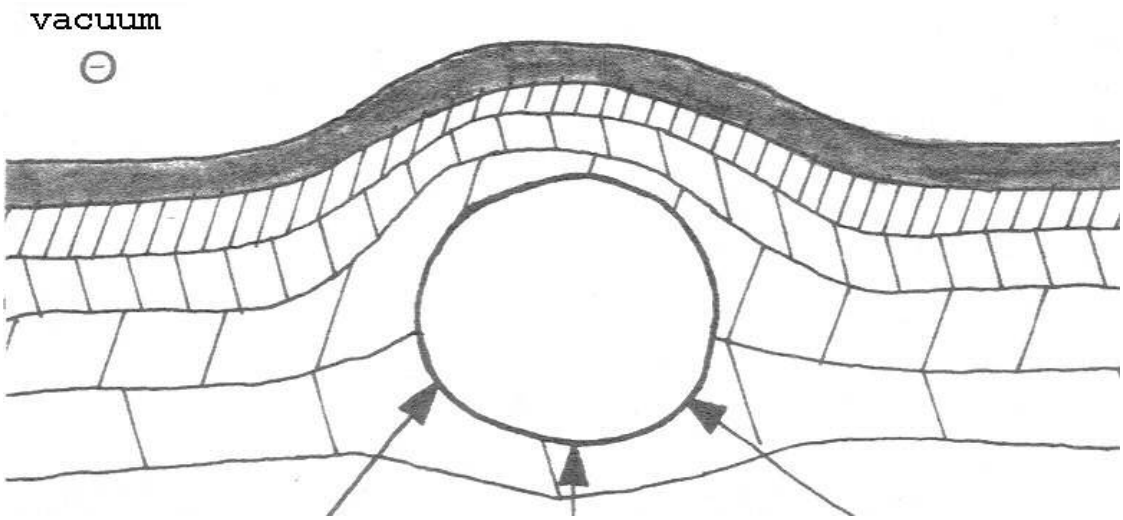

Fig. 3 – the upper periphery of the bubble has arrived at the surface.

Figure 3 shows the bubble reaching the crust and creating a dome-like convexity on the surface on account of its buoyant force. It should be emphasized that the lunar day is longer than the terrestrial day. The greater temperature differences notwithstanding, dilatations resulting in cracks through which gases might escape onto the surface souranded by vacuum.

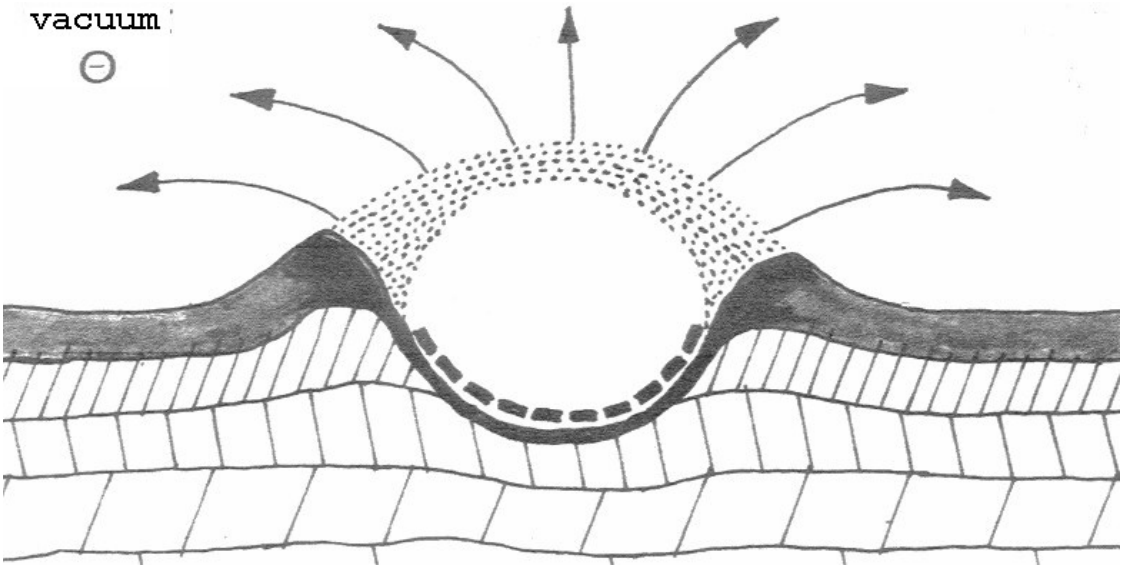

Fig 4 – the bubble has made contact with the vacuum; on Earth the atmospheric pressure prevents an explosion at that moment. But on Moon, bouble exploded that very moment because there was no any pressure of the atmosphere.

Yet dilatations, i.e. temperature breathing, did exist and they made it possible for a bubble to continue moving toward the surface.

Figure 5 shows a bubble finally coming into contact with the vacuum surrounding the Moon. Since the bubble is literally compressed thanks to the expulsive forces, and since there is a vacuum around the lunar surface, the outcome is an almost immediate »explosion of evaporation«, wherein the compressed gas explosively expands in a vacuum. What were the consequences?

1. The top of the dome-like convexity is radially ripped and shot away with a tremendous force.

2. The bottom part of the bubble, embedded in a mass which has not yet cooled off, is affected by the evaporation explosion: the fluid matter speedily gets cold, solid and bound to the hardened layers above.

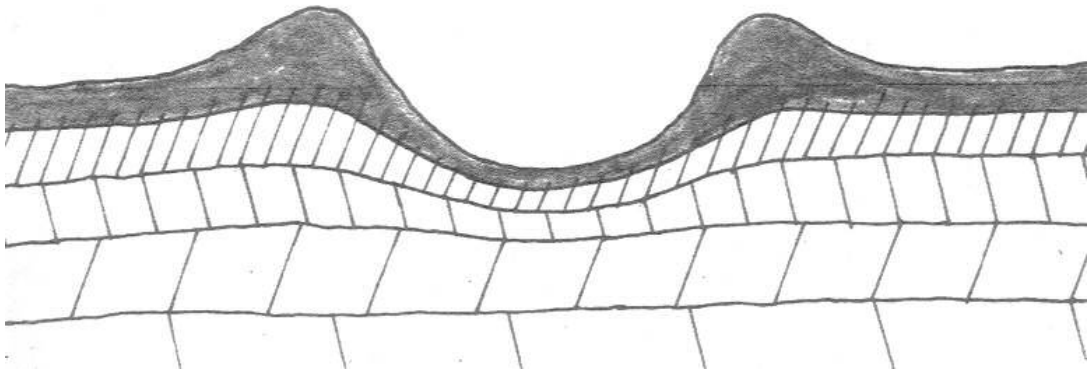

Fig. 5 – the convexity that remained after the explosion of the bubble presents an authentic crater.

Figure 5 speaks for itself: The final outcome of the process is an authentic lunar crater, from a few microns to several kilometers large.

We then conclude: Owing to smaller gravity forces the forces of buoyancy and thrust of the lunar gas bubbles were smaller than those on the Earth. If we also take into account that the Moon's (initial) cooling off was considerably quicker than the Earth's, a new question arises: Due to the inordinately quick cooling off, did the process of bubble expulsion not take so little time (»little« in the astronomical sense, of course) that many of the bubbles simply never made it to the surface but remained, in the process of cooling off, solidified beneath the surface?

When this question is combined with the question of the total lunar weight, the following answer emerges: The entire surface of the Moon rests on an imposing number of solidified bubbles of gas of different diameters so that during a seismic (or atificially induced) moonquake it vibrates (or would vibrate) like a drumhead. Hence it is possible that the lunar surface, lying so to speak on an »air cushion«, is such a splendid thermic insulator that the Moon, in spite of its small mass, may still not be completely cold deep inside.

Figure 6 is a rough illustration of a deep cross-section of today's lunar surface.

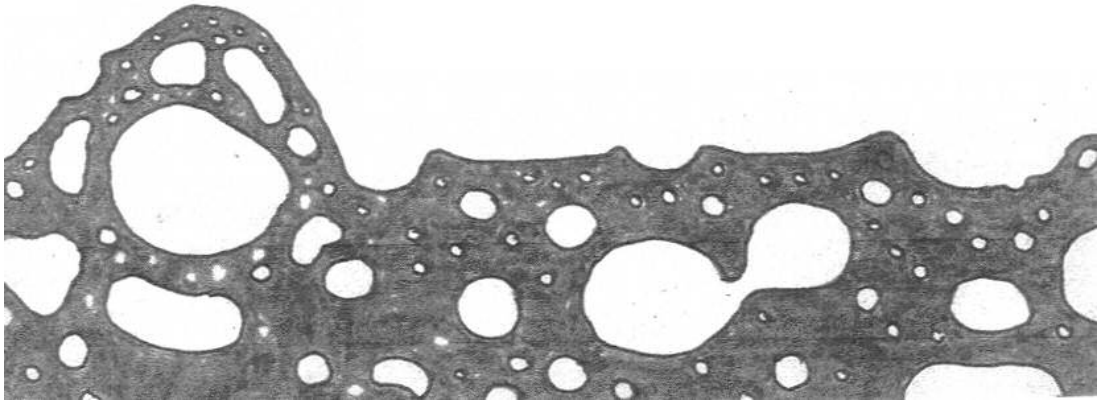

Fig. 6 – a cross section of the lunar surface overlying numerous solidified bubbles.

I think that the Moon is no isolated case and that the same process, except in a milder form, took place on Mars and is resposnsible for the relatively numerous craters on that planet. The atmosphere pressure on the Earth prevented the bubbles from evaporating explosively as they did on Mars, whose atmosphere is inadequate. The atmosphere pressure on Mars, whose mass is much smaller than the Earth's, is several times lower and consequently the number of craters per square kilometer is much smaller than on the Moon.

Let me just add a few details published after the Apollo crew had successfully returned from their mission to the Moon:

1. The rocks brought from the surface of the Moon contained hardened bubbles of gas.

2. The ionization indicator which the Apollo 14 crew set upon the Moon registered two intensive gas eruptions on 22 February 1971. They are explainable by the great specific strain on the ground when the empty lunar module crushed down, causing the lunar surface to crack and the gas from the solidified bubbles to escape through the cracks to the surface.

3. Unexplained lengthy oscillations of the ground following the chrusing impact of the empty lunar module on the surface of the Moon.

4. An unusually large quantity of lunar dust, which cannot be of an external origin because analyses have found its content to be similar to the solid ground on which it is situated. This dust on the Moon is actually a part of the surface that the bubbles disrupted and dispersed as they broke free.

I believe I could add a number of cases where scientists who followed conventional theories about the Moon bumped into problems which they were unable to explain but which are explainable if the answer is sought within the framework of the theory submitted here.

New horizons and new perspectives are being opened. If the problems of transport are solved in time, the bubbles inside the Moon may yet become inhabited by scientific teams, tourists, or even patients.

V. Markovic