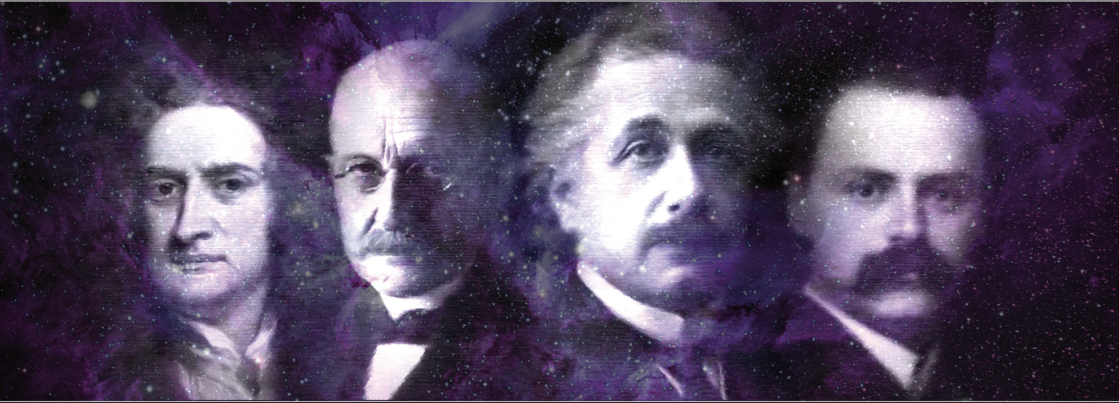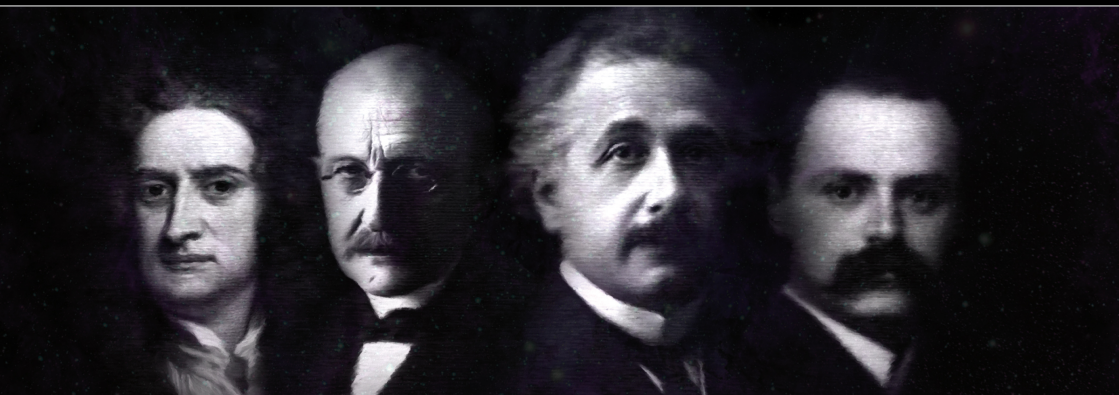CHRISTOPH POTH

EINSTEIN'S UNIVERSE WITHOUT BIG BANG

AND THE SOLUTION OF HAWKINGS PARADOX

$$D_U = \frac{c^2}{g_U}$$

ISAAC NEWTON
$F = G\frac{m_1 m_2}{r^2} = mg$

MAX PLANCK
$E = hf$

ALBERT EINSTEIN
$E = mc^2$

KARL SCHWARZSCHILD
$r_s = 2\frac{GM}{c^2}$

On the basis of the spiritual ideas of a Belgian priest and an Indian Brahmin, so-called "modern cosmology" has been peddling unadulterated mysticism for decades now. This mysticism has found worldwide distribution especially through a plethora of television documentaries, despite the fact that their pseudoscientific content has been proven to lie completely outside the laws of physics. In this way, people have been led to believe that 95 percent of our universe consists of mystical dark energy and dark matter and only 5 percent of the universe is accessible to us empirically. But what lies behind the scandalous and lamentable failure of an entire branch of astrophysical science and who has an interest in promoting this mysticism?

The author of the book reveals clearly, how the scandalous failure of a whole branch of science came about and explains the actual dynamics of the universe using the reputable physical findings of Isaac Newton, Max Planck, Albert Einstein, and Karl Schwarzschild. Almost everything about the universe that you believe to be true is demonstrably false. A mixture of mysticism and science-fiction! After 100 years, Einstein's idea of a static universe has turned out to be true after all. There was definitely no Big Bang, nor are there so-called "black holes" in which space, mass and time collapse to a point, but rather relativistic black spheres. These black spheres are the solution of Hawkings paradox.
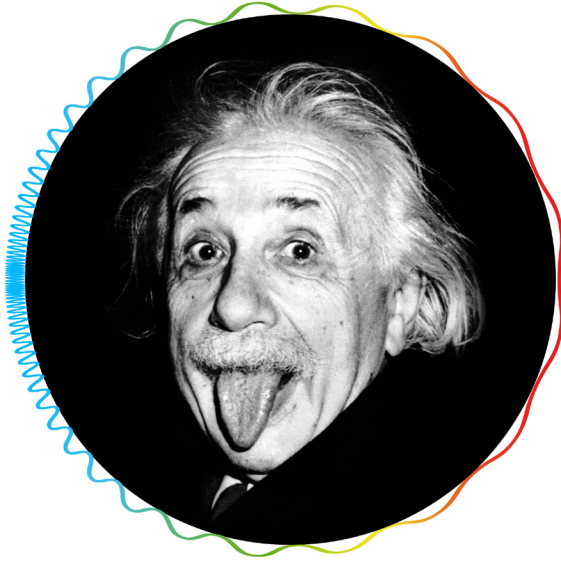
EINSTEIN WAS RIGHT!

$$D_U = \frac{c^2}{g_U}$$

The diameter of the universe „D_U" (which is the maximum possible distance between two points within the universe) corresponds to square the speed of light „c^2", divided by the value of the Pioneer anomaly „g_U" (gravitational potential of the universe).

„...so that I may perceive whatever holds the world together in its inmost folds."

Johann Wolfgang von Goethe

CHRISTOPH POTH

EINSTEIN´S UNIVERSE WITHOUT BIG BANG

AND THE SOLUTION OF HAWKING´S PARADOX

INDEX

THE MAIN STATEMENTS OF THIS BOOK

(all statements are explained and proven in detail in this book)

1. **The Doppler Effect (9) is increasingly superseded by the relativistic gravitational redshift effect, the further we look into the universe.** This means that the observed redshift of the spectral lines (9) of distant galaxies is not a result of the Doppler Effect but of the relativistic gravitational redshift effect (10). The observed redshift of distant galaxies only apparently implies that the universe is expanding, if the redshift is mistakenly interpreted as a result of the Doppler Effect!

2. **Background radiation (11) has been subject to a 4000-fold time dilatation** according to *Einstein's General Theory of Relativity*. Thus, one can observe distant events in slow motion. Shown here is the cosmological time dilatation formula depending on the redshift factor z:

$$T_1 = T_0(z + 1)$$

3. **Furthermore, background radiation (11) is a 4000-times magnified detailed view of the ancient universe and not the result of a Big Bang. It shows the early stage of the early stars of our universe. The magnification originates from the fact that the universe itself has to be considered as the largest possible gravitational magnification lens**.

4. **The classical Hubble equation for determining distances in the universe is wrong** and must be replaced by the following relativistic equation:

$$\frac{c^2}{g_U}\left(1 - \frac{\lambda_e}{\lambda_r}\right) = D = \frac{c^2}{g_U}\left(1 - \frac{1}{z+1}\right)$$

Distances of celestial objects relative to us, can be determined very precisely with this equation on the basis of the gravitational potential „g_U" of the universe and the red-shift factor „z".

5. Background radiation is the light and, thus, an image of the ancient stars of the universe. These stars did not form after a Big Bang. Extremely high definition images of the background radiation will prove this clearly. **Background radiation is a 22 billion years old snapshot of the ancient stars of the universe whose light has been subjected to a gravitational redshift of z = 3999.**

6. **The size of the universe is defined only by its mass,** the speed of light and the gravitational constant. The universe has always had the same spatial extent. Expansion or shrinking of the universe is impossible!

7. The *Inflation theory* is refuted.

8. The theory of *dark energy* is refuted.

9. The theory of *dark matter* is refuted.

10.   „Black holes" in the classical sense do not exist in our universe, rather *black spheres* in the   relativistic sense. This is the answer to Hawking's problem.

11.   Relativistic *black spheres* replace the concept of classical „black holes". **They exist in the universe and define a gap in the universal space-time structure.** This effect was clearly described as long ago as 1916 by Karl Schwarzschild.

12. **Hawking radiation does not exist!**

13.   The Chandrasekhar limit (12) is refuted.

14.   There are no neutron stars.

15.   The *Kerr metric* for describing so-called „*rotating black holes*" is refuted.

16. The theory of matter-antimatter asymmetry and annihilation is refuted.

17.   **The mass of the universe is empirically determinable for the first time by means of the** *pioneer anomaly:*
$$M_U = \frac{c^4}{4 G g_U}$$

18. The cosmological constant of Einstein´s field equation and the mean energy density of the universe can be determined with help of the *Pioneer anomaly.*

AN APPEAL TO THE SCIENTISTS

There was reason to celebrate in the field of cosmology. Almost all voices of the press, including TV and radio stations, announced the ultimate breakthrough in the field of Big Bang research. Gravitational waves, a kind of „Big Bang echo", had allegedly been recorded by means of background radiation. A Nobel Prize was already claimed. However, the world of astrophysics was in a real fix. Trying to „read" gravitational waves by means of background radiation goes completely against any type of expert knowledge of physics and is akin to reading tea leaves. Unsurprisingly the „discoverers" of the alleged gravitational waves have recently admitted a mistake (or rather a deception?). However, the nonreflected and unfounded balderdash of alleged gravitaional waves of a presumed Big Bang was brought into the world with pomp and circumstances. Where are the voices of the critics, revolting against what is being presented as scientific sensations in the field of cosmology? It seems as if most astrophysicists are trapped in inactivity and so are passively supporting plenty of unscientific ideas. It just cannot be true that the astrophysicists of the world are really so stupid and naive as to not recognize, that what is going on in the field of cosmology has nothing in common with science, but is just another form of palm reading. Given the wonderful culture of science as it existed 100 years ago, today`s kind of „cosmological science" appears as a slap in the face of the great people and outstanding scientists who laid the foundations of modern physics.

In 2004, scientists had enough indeed and a number of astrophysicists from all over the world dared to rebel. These scientists published an open letter in which they criticised harshly the more than dubious Big Bang research. This public letter can be found at _www.einsteins-universe.com/cosmologystatement.html._ Unfortunately, the honourable attempt of these brave scientists has not yet achieved the desired success which would result in the abandonment of an extremely unscientific mainstream. But that should change now. The Big Bang theory - based on Hubble's classical conclusions(1) - and plenty of other theories like the _theory of cosmic inflation(2)_ (superluminal expansion of the universe shortly after the alleged Big Bang), the theory of _dark energy(3)_, the theory of _dark_

matter, the *theory of singularity(4)* of space and time in so-called *black holes* (to the utmost collapsed stellar remnants) and the theory of *wormholes* („short cut tunnels" to other places in the universe, or even to other universes) are being constantly foisted on billions of people in dubious documentaries as the latest state of the art in the field of cosmology. Some „very clever" astrophysiscists do not shrink back from spreading this unscientific nonsense in collaboration with the media. This kind of entertainment is veritable brainwashing in line with the concept: keep repeating a false assertion until it is believed. It seems as if the public actually believes these assertions and fairytails. However, scientists should feel more responsible to the peoples of the world rather than trying to cheat them. Scientists should act as safe keepers of the truth rather than propagandists of lies. Whoever knowingly spreads falsehoods is a fraud and should not be called a scientist but a liar. Any scientist, who recognizes that in the field of cosmology nonsensical claims are being spread, has a moral obligation to rebel in order to avoid the demise of empirical science. People rely on the findings of scientists because they believe that science is a tool to discover the truth, and they believe that scientists, who embody this science, are reputable and honest. Persons who discovered their interest in astronomy when they were young and made this interest their profession have a responsibility! Scientists should always act responsibly in all respects and especially in respect of the people who expect enlightenment and not esoteric quackery and deception!

Dear scientists, please, take your responsibility seriously and deceive neither yourselves nor the general public. Scientists who do not publicly disclaim against deceitful claims but prefer to do nothing incur guilt through omission. Within a decade, high-definition images of background radiation will clearly show that background radiation is the light of ancient stars that was redshifted by the gravitational potential of the mass of the universe towards the microwave range. The value of the gravitational potential has been, for the first time, empirically determined by the space probes *Pioneer 10* and *11*. The origin and the value of the so-called "Pioneer anomaly" has still not been understood correctly by most astrophysicists (it is anticipated incidentally that the Pioneer anomaly is *not* caused be alleged thermal thrust effects!) . However, we shall reveal

the true origin of the *Pioneer anomaly* in the course of this book. One can condemn the contents of this book but the truth will always prevail. In the immediate future, it will become obvious that an entire branch of science failed and, then, the scientists in the field of cosmology will be faced with a barrage of criticism. Dear cosmologists, do you really want to be exposed to this accusation? Now you have the chance to change course and actively help in bringing astrophysical science back on to a course of truthfulness. Think of the ideals and idols of your youth and betray neither them, nor yourselves. Thankfully, we have excellent engineers who build fantastic devices whose goal is to construct these devices as well as possible in order to fulfil their intended purposes. These impartial people will eventually tear down the pillars of a currently unscientific esoteric temple and will help to bring cosmology back on track in the search for knowledge and truth. The brilliant achievements of engineers have already helped beyond measure in disclosing the true background of our universe. Unfortunately, it seems that nobody understands the measurements correctly. But this will change in the near future.

ENGINEERS OPEN THE DOOR TO AN ADVANCED COSMOLOGY

At the beginning of this book, the excellent engineers of this world should be thanked for developing the unique and expensive instruments with the help of which astronomers are able to widen our horizon in regard to the dynamics of our cosmos. When we consider the countless accomplishments of the American space agency *NASA* and of course of the *Russian space agency* (former UdSSR), it is clear that these organization deserves applause and appreciative respect. Of course, the outstanding moon landing is one of the crowning achievements of NASA, but the many other missions that have extended our understanding of the cosmos enormously over the decades are equally important. The *NASA* satellites for measuring background radiation, *COBE* and *WMAP*, and *ESA's PLANCK* satellite have helped us to turn over a new leaf of cosmology. They support us in refuting the long-outdated notion of a Big Bang.

None of the people involved in the **Pioneer 10** and **11** missions could imagine what an amazing impact these two satellites would have on our present understanding of the nature of our universe. These missions were carried out in the 1970s, more than 40 years ago. NASA at that time certainly could not imagine that the two probes would deliver conclusive and significant arguments against the Big Bang theory in our present time. For the first time, it is empirically possible to prove the real nature of the universe on the basis of the *Pioneer anomaly*. The *Pioneer anomaly* is a mysterious and a seemingly inexplicable deviation of the Pioneer 10 and 11 satellites from the calculated path. We will see that these two satellites and the probes *WMAP* and PLANCK - which measured background radiation - not only solve the biggest mysteries of cosmology but explain the true meaning of *Einstein's Cosmological Constant* as well. In the course of this book, Einstein's constant will be given the honour it deserves. We should think about awarding the Nobel Prize to NASA as a body because this institution has solved the greatest mystery of the universe without even knowing it!

Although, one would like to applaud the engineers, it must be said that

this does not apply to many astronomers in the world (mind you, not all) who still grasp at an archaic view of the universe despite the amazing engineering achievements. It is unbelievable that the Big Bang theory and lots of other nonsensical theories are being taught today by means of misleading documentaries which are released en masse. With the aid of these documentaries, non-scientific and unempirically ascertained nonsense is spread around the world in a kind of daily brainwash. It is simply inconceivable that many of the theories of the so-called „modern cosmology" completely ignore the laws of physics. The recent „sensational" publications concerning the discovery of gravitational waves, which were allegedly caused by the Big Bang and supposedly could be implied from the background radiation, push cosmological nonsense to an extreme.

The Big Bang is a purely esoteric notion of a *Belgian Catholic priest*, and the singularity of burnt out stellar remnants which shrink to a point without extent is an esoteric adoption of an *Indian-born Brahmin*! It is crazy that astronomers have been trying to enforce both of these esoteric assumptions for decades. This attempt is doomed to fail. This book was written to put an end to these esoteric myths in the field of cosmology. Unfortunately, there are only a few far-sighted astronomers who have completely understood that a Big Bang and singularities in black holes are physically impossible. Mainstream cosmologists are, however, not yet able or willing to change. Nevertheless, this will soon change. Within the following decade, at the latest, high-resolution images of background radiation will prove that background radiation is the gravitationally redshifted light from ancient stars of our universe which did not form after a Big Bang. With the help of this book, we will recognize that this evidence has already been provided.

We will put all of the wrong statements on the test bench of physical laws and will disprove them, one by one. This can be done exclusively on the basis of the intellectual achievements of ***Isaac Newton, Max Planck, Albert Einstein*** and ***Karl Schwarzschild***. The following illustration not only clearly shows the technical progress of the resolving capacity of the satellites for measuring background radiation. The image in itself is already a striking piece of evidence against the Big Bang theory as

we will recognize in the course of this book. Although this theory was a nice philosophical idea of the *Belgian priest George Lemaitre*, it was evident from the beginning that the Big Bang theory was based on a very flawed understanding of physics. Even Einstein said that the physical knowledge of Mr. Lemaitre was quote, „hideous", unquote! Nowadays, one would probably choose more drastic words. To put it bluntly, it is not a question of whether the Big Bang theory is wrong or right. It is only a question of how cosmologists could even seriously consider the Big Bang theory and how it is possible that up to the present day, it is considered as our most up-to-date knowledge, although, it is completely illogical and baseless from a physical point of view.
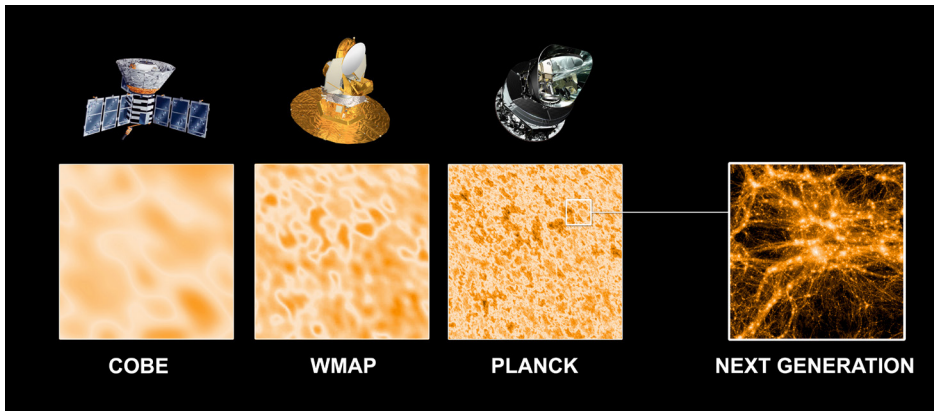
Fig. 1 | Development of the resolving capacity of satellites to detect background radiation

Even a child is able to notice that the background radiation does not show a diffuse distribution of matter that corresponds to an initially hyper-hot amorphous state of the universe out of which the first stars after a sufficient cooling of the universe formed due to its alleged expansion. Such an interpretation could have been an option only when considering the low resolution image of *COBE*. However, since the satellites *WMAP* and *PLANCK* is obvious, that background radiation shows clearly recognizable subtle structures of concentration. It should really be clear to everyone that this fact allows only one conclusion: background radiation is the light of extremely far off ancient stars in form of a rather retrospective snapshot that allows us to watch the original

state of the universe in ultra slow motion as it was about 22 billion years ago! These stars definitely did not occur after a mock Big Bang. This will be proven empirically in the course of this book. However, the resolving power of the next generation of satellites for measuring background radiation and ALMA (Atacama Large millimeter and submillimeter Array) in Chile will substantiate the statements of this book and then the Big Bang model will receive its knockout blow.

We must definitely abandon the model of an expanding universe, this is undisputable. The extent of the universe is firmly defined by its *mass*, the *speed of light* and the *gravitational constant*. **The mass and the space of the universe are interdependent.** There is no space without mass and no mass without space. This,yet unknown axiom will be explained in the course of this book. Without knowing it, NASA has given us the opportunity, not only to determine the actual mass of the universe, but to determine the actual invariable extent of the universe as well. This is possible when one recognizes that the dynamics of our universe correspond to a phenomenon called a „black sphere". This fact might confuse some readers, but there is absolutely no doubt about it as we will recognize later. Alongside the Big Bang theory, there are plenty of other undesirable developments in the field of cosmology which have urgently to be stopped, such as the theories of dark energy and dark matter, the theory of superluminal cosmic inflation of the space of the universe, the theory of the singularity of space and time within alleged „black holes", the theory of „worm holes", the Kerr metric to describe alleged„rotating black holes" and other dubious theories. Nonetheless, let us cover the topics systematically.

COSMOLOGY AND SCIENCE

Currently, one gets the impression that the level-headed scientific basis of science has been abandoned and that we are reverting back to the Dark Ages. The Age of Enlightenment is gone. It is actually put forward that the universe consists of 95 % dark forces in form of *Dark Energy* and *Dark Matter*. As already mentioned it came actually to be believed that *gravitational waves*, a kind of echo of the Big Bang, could be „read out" of background radiation. This is akin to palm reading and is a last poor attempt to keep the Big Bang theory alive. It certainly has nothing in common with science and must surely cause a global scream of horror among the astrophysicists!

In previous ages, the cosmos was a fundamental element of philosophy and religions. The ancient empires and dynasties of the Sumerians, Egyptians, Chinese, and also the empires of the Incas, Mayans and Aztecs and lots of other cultures not only based their religions on the recurring phenomena of the cosmos, but also oriented their entire social system accordingly. Even in Christianity, this is even nowadays the case. Easter is celebrated on the first Sunday after the first full moon after the sun has passed the vernal equinox. Christmas is celebrated when the sun begins to leave the deepest point of the sun´s ecliptic. For the people of ancient times the cosmos was always synonymous with the divine and with the search for an all-encompassing answer to all questions regarding the mystery of being. However, even nowadays the cosmos can be excellently misused for spreading esoteric contents, without the recipients even noticing it. This is especially the case when such content is distributed under the guise of apparently empirical and sound physics. During the Age of Enlightenment, the fog of ancient mysticism seemed to lift and rational and empirical cognition came to light. But now, the impression is that cosmological research is reverting to the Dark Ages. According to the statements of the cosmologists, burnt-out stars disappear in mystical singularities in which space and time shrink to a point without extent, thus, dissapear into nothingness. Dark energy and Dark matter seem to have a grip on the universe. If we were not in the third millennium, one might be tempted to believe that cosmology is more an act of faith rather than factual astrophysics. No more time should be wasted in bringing

cosmology back to a basis of factual and empirical research; otherwise so-called „modern cosmology" will become an object of ridicule. If one puts most of the theories of so-called „modern cosmology" on the test bench of physical laws then they fall at the first hurdle. This is the approach used in this book. One can only recommend to today's cosmologists to turn their backs on the Big Bang theory before the obvious, embarrassing and crushing downfall of this theory, otherwise, the spokespersons of today's cosmology will be ridiculed. Let us reflect on what is factual and demonstrable, instead of losing ourselves in mystical darkness making cosmology an esoteric circle! It is simply intolerable, from a scientific perspective, that the Big Bang theory is kept alive by fabricating one crazy theory after the other. It is just outrageous. This book was written as an impulse to stop this ridiculous nonsense. The contents of this book are an unequivocal impeachment against the cosmology of the past 80 years. The Big Bang theory arose out of a pure lack of knowledge or was religiously motivated and flagrantly violates the foundations of physical laws. Cosmology, as it has been presented to us for over 80 years, is based on dilettantism.

As already mentioned, the origin of the Big Bang Theory's lies in the philosophical ideas of a Belgian priest and mathematician, as well as in the observations of an astronomer, who initially drew the wrong conclusions. We are talking here about George Lemaitre and Edwin Hubble. They interpreted the observed redshift of the light of far off galaxies initially on the basis of classical physics. Initially neither of them had any or at least did not have sufficient knowledge of the new, modern physics which was beginning to be established in Europe at that time. As a result of this misinterpretation, an entire worldview full of pure speculation was propagated, and since then everything has been done in order to substantiate a theory that is inherently doomed. However, it is not much known that Hubble over time argued more and more in support of a static so-called steady state universe. Even though he is nowadays considered to be one of the fathers of the theory of an expanding universe (see: „*Hubble´s cosmology - From a finite expanding universe to a static endless universe.*" Assis, Neves and Soares). In retrospect one cannot blame Lemaitre and Hubble because Lemaitre's philosophical approach was allegedly confirmed by the observed red-

shift, which is in the classical sense interpreted as *Doppler effect*. This led to the assumption that far off celestial objects would be moving away from us. It seemed that even Einstein was impressed and allegedly proceeded to reject his own ideas of a static universe. However, Einstein indeed never argued in support of the Big Bang theory but rather remained silent about the Big Bang theory. This strange behaviour of Einstein is self-explanatory. In the course of this book, we will reveal Einstein's true perception. One has to keep in mind that physics in general and particularly astrophysics at that time were subject to an extremely rapid and revolutionary change. The real reasons for Einstein's alleged change of opinion in regard to the Big Bang theory are very obscure and should perhaps be considered against the background of the political situation in Europe at the time. Let us not forget that Einstein was a German of Jewish origin. After a working visit in the USA in December 1932, he never returned to Germany because in January, 1933, Adolf Hitler seized power in Germany. Thus, Einstein was faced with the fact that a return to Germany could cost his life. At this time, the Catholic Church, which was still very powerful, might certainly have been helpful in enabling Einstein to find secure refuge in the USA. There is a good case for believing that it was not a coincidence that Lemaitre accompanied Einstein on his USA trip. Lemaitre was certainly promoted by Einstein, otherwise Lemaitre would never have become known. This happend in spite of the fact, that Einstein was convinced of his *relativistic steady state universe*. Einstein definitely knew that the observed redshift of celestial objects was a result of the so-called *gravitational redshift effect,* of which more later. As the following illustration (fig. 2) of the book „*Wunder des Himmels*", edited in the year 1910 in Germany, shows, an understanding of the nature of the universe was still very limited in the truest sense of the word at the time. It was assumed that the Milky Way filled the entire universe. There was no mention of other galaxies, which were indeed observed, but were regarded as being part of the Milky Way.

Thanks to Hubble and some other astronomers, the door to a universe, whose size went beyond anything imagined before, was opened for the first time. But today, more than 80 years after the foundation stone of the Big Bang theory was laid, the compulsive upholding of this incorrect approach can no longer be accepted, bearing in mind the improved resolution of background radiation with the help of the PlANCK satellite.
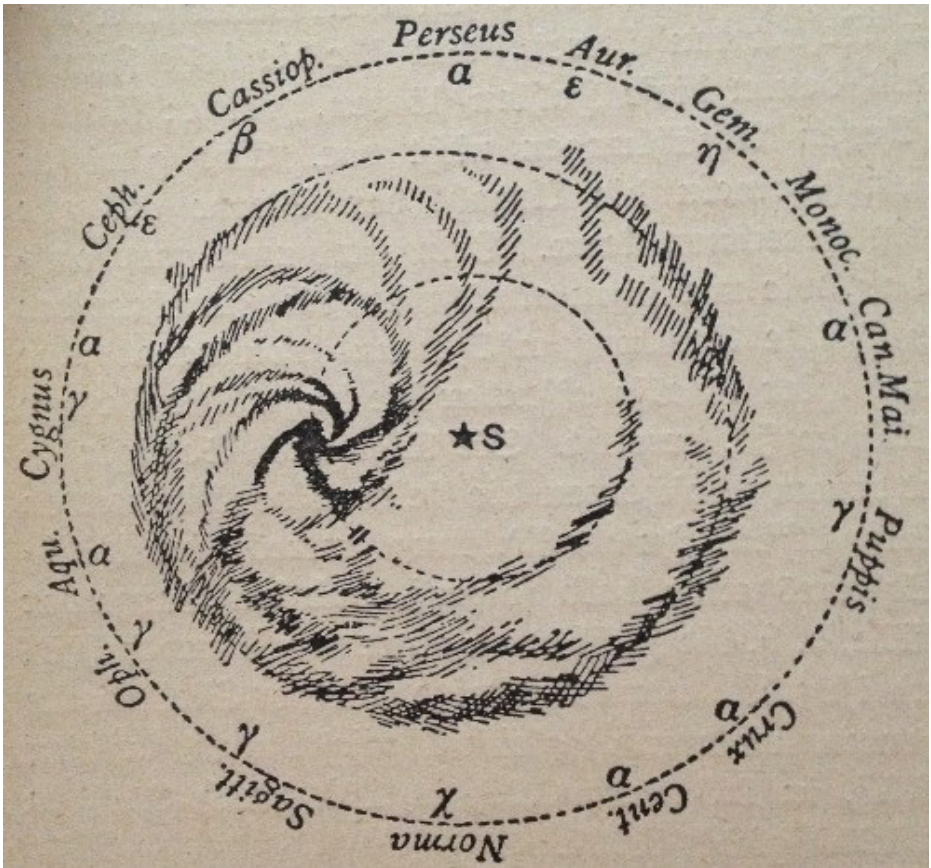
Fig. 2 | This is how the universe was imagined in 1910. S stands for the position of the sun.

Nowadays, it seems that proponents of the Big Bang theory do not shrink back from using any shoddy trick to uphold this theory, in spite of the discoveries of the PLANCK satellite and all the indisputable evidences, which show that the Big Bang could never have happened. Anyone who shakes his head in regard to the period of history in which *Nicolaus Copernicus* (5) and *Galileo Galilei* (6) lived trying to replace the *Ptolemaic world view* (7) without success, should know that we are currently in a similar situation. At that time, the clergy of the Holy Catholic Church tried its best to manifest a worldview in which, for biblical reasons, the earth was the centre of the entire universe and everything revolved around it. Today, dubious resources of all types are used to manifest a

„mysterious" Big Bang theory which is a disgrace. In addition, the *theory of cosmic inflation* (for further details see item 2, appendix) was fabricated to substantiate the Big Bang theory. This theory is presented as being a brilliant achievement of human thinking, which is the height of folly! In fact, the *theory of cosmic inflation* is an unacceptable trick in order to explain the observed measured results of background radiation which are not in accordance with the Big Bang theory. The theory of cosmic inflation is presented as the result of an „intellectual tour de france" and has been established as a fundamental element of a dubious „avant-garde cosmology". Well, congratulations! Equally bad are the many cosmology documentaries. These highly widespread documentaries are reprehensible because people are being tricked into believing that what they are watching reflects the most up-to-date level of knowledge. However, what is professed in these documentaries blatantly violates the laws of modern physics. There are, however, a growing number of clever and far-sighted scientists who are rebelling against the Big Bang model. Nevertheless, they must feel like lone voices in the wilderness. You cannot hear them, no matter how loud they shout. To make sure that all cosmologists follow the herd, a Nobel Prize was awarded in 2011 which allegedly confirmed the Big Bang theory. *Attached you will find an explanation of the Nobel Prize Laureate's approach (item 8, appendix).* The Nobel laureates said themselves that they initially intended to refute the Big Bang theory. This was a thoroughly laudable goal. The Nobel laureates were, on their own admission, the most surprised of all that the Big Bang theory had been be allegedly confirmed by means of their measurements and so the Big Bang proponents could celebrate; criticism of the Big Bang theory was again silenced. Now the same was being tried with mock gravitational waves which weree stated to originate from the Big Bang. It is finally time to stop this ridiculous and regrettable fiasco. What is currently being dished up in the field of cosmology defies description and is a slap in the face of the sound scientists who made excellent scientific achievements in physics. Given the stunning technical achievements and accomplishments of the engineers who have provided us with a wealth of terrific opportunities to observe the cosmos, brilliant physicists like *Newton, Einstein, Planck, Schwarzschild* and many others would turn in their graves if they could see how so-called "modern cosmologists" interpret the observed effects in the cosmos. Readers

who are not very familiar with mathematics and physics should not be frightened when physical equations surface repeatedly throughout this book. They are intended only for those of you who are interested in physics, so that you can see and check again that the explanations are based on physical laws and are not far-fetched. The text, however, is formulated in a way that the reader who has not delved into physics should understand it anyway.

Before we begin to explain the glaring errors with regard to the interpretation of the observed phenomena of the universe, it is important to understand how the Big Bang theory came about in the first place. Allow me to go into this matter in detail. For this, it is essential to look very intensively at the phenomenon of so-called „*black holes*" as well. We will learn that the description of „*black holes*" is completely wrong. This will, without a doubt, be extremely interesting for **Mr. Stephen Hawking (**we will learn that so-called *Hawking radiation* can´t exist because it arose from wrong conclusions). Given the fact that a Nobel Prize was awarded in physics in 2011, which dealt with a special type of star called *type 1a supernova*(8), we will look at collapsing stars very intensively in this book. Investigations of this type of stars are supposed to underpin the Big Bang theory. Here, the so-called *Chandrasekhar limit* plays an important role. This significant role can only be understood if we understand the dynamics of collapsing stars correctly. Throughout this book, the enormous importance of the dynamics of a phenomenon named „*black holes*" will be explicitly described even in terms of the dynamics of the universe. Consequently, you should not be surprised that a large part of this book deals with a phenomenon incorrectly referred to as a "*black hole*". You can rest assured though that you will receive a completely unique and new perspective on the processes in the universe which have never previously been clarified as they will be in this book.

Now, let us look at the Big Bang theory.

DEFINITION OF THE BIG BANG

By definition, the Big Bang was the beginning of space, time and matter; the birth of the universe. According to the Big Bang theory, it began as an extremely hot and dense entity and has been expanding thenceforward. The universe is said to have gone through an initial expansion which was faster than light (this alleged phenomenon is known as „*superluminal cosmic inflation*"). Subsequently, a slower expansion is said to have taken place which is now to accelerate again. It is said that the universe has increasingly cooled down since the beginning of the expansion and continues to do so. This theory is allegedly confirmed by the red shift of the spectral lines of far off galaxies which increases the further the galaxies are away from us (which is mistakenly misinterpreted as an expansion of the universe), and by the *2.73 Kelvin background radiation*, the assumed „*residual glow*" of the hyper-hot Big Bang. Both phenomena will be explained in more detail later. In the beginning, it is said that the entire universe was very highly compressed. No smaller volume than the *Planck volume* could have existed, as this is the theoretically smallest possible volume. What Planck has to do with the subsequent units, and how Planck units came into existence is beyond the scope of this book. Thus, we have to take for granted that the theoretically smallest possible volume is the *Planck volume*:

$$4,22410 \dots 10^{-105} \ m^3$$

In support of your understanding of this abstract number, here is a brief explanation. Imagine a cubic meter as the volume of a cube of which the length of the sides is one meter. In the case of the Planck volume, the length of the sides of the cube would be the *Planck length*, corresponding to the theoretically shortest length. When it is written-out, it looks like this:

0.000000000000000000000000000000001616199 meters

According to Planck, there is no smaller length. Furthermore, it is claimed that the universe, with its entire mass, was compressed to the theoretically smallest possible volume, and was subject to maximum

possible pressure, the *Planck pressure*.

$$4,63309 \ldots 10^{113} \, Pa$$

Imagine a car tire. This usually has an internal pressure of 25,000 Pa (*2.5 · 10⁴ Pascal)* or 36 psi. The above calculated number has 113 zeros. Written-out, the number looks like this:

463309000000000000000000000000000000000000000000000000000000000 0000000000000000000000000000000000000000000000000000000 Pascal

It is said that in this case, the entire universe would have had an extremely high temperature, because it was compressed very tightly. According to quantum physics, the maximum temperature is:

$$1,416833 \ldots 10^{32} \, K$$

Zero Kelvin is equivalent to a temperature of about -273.15 degrees Celsius. It does not get colder than that. In Celsius, the temperature of 1.416833…10^{32} Kelvin is about 14000 billion billion billion degrees Celsius (25500 billion billion billion degrees Fahrenheit). A temperature like this brings hell to mind. These really extreme Planck units are derived from quantum physics and cannot be larger or smaller. This all sounds incredibly convincing and you may be brainwashed into believing that this is the most up-to-date level of scientific knowledge that exists. The Planck values are correct but they are completely out of context and cannot possibly serve as a basis for the early state of the entire universe and the idea of a Big Bang. The Planck values, which have been described, are those of the theoretically smallest possible „black hole" of just 2.1765 ... $\cdot 10^{-8}$ kilograms or **0.000021765 grams**. This fact is kept very quiet. A universe with the mass of hundreds of billions of galaxies could never be compressed comparably tight and small. From a physical point of view, this is just pure nonsense as can be easily proved using simple high school physics.This will be done in the course of this book. The Big Bang model arose from complete ignorance of physical laws. Nevertheless, this theory has been propagated for such

a long time that it is now largely accepted without question. Not only that, but any criticism of the Big Bang model is met with considerable intolerance. What is even worse is that the so-called „experts" postulate a *Dark energy*, which allegedly enables the universe to expand, and even a *Dark matter* that allegedly prevents the galaxies from bursting apart, as the rotation characteristic of the galaxies does not adhere to Kepler's laws of planetary motion. The rotational dynamics of galaxies is, however, not at all comparable with the orbital dynamics of planets orbiting a central star. A rotating galactic disc consists of up to about 100 billion single mass points (stars) dispersed across this galactic disc. A planetary system like our solar system consists of a star, representing some 99.9 % of the mass of the solar system and is orbited by a few planets, representing about 0.1% of the mass of our solar system. Thus, to compare both systems with each other is utter nonsense and has nothing in common with sound physics. Ultimately, this nonsense led to the postulation that 24% of our universe ought to be made up of and *dark matter*. Another 71% are claimed to be *dark energy* which is supposed to let the universe expand. Things could not get any worse or more stupid than that. But what does that mean? When one postulates that only 5% of the entire universe is physically and empirically accessible then cosmology degenerates to pure speculation and that in turn means that the field of cosmology is 95% esotericism. And if this was not bad enough, in recent times some alleged "avant-garde scientists" have even come to doubt the universal validity of the *universal constants* such as the *speed of light* and the *gravitational constant*. This in turn means that the entire universe would not be empirically explorable and would be available for 100 % esotericism. Indeed, in 2011 some dubious scientists at the CERN research facility in Geneva actually tried to make the world believe that they had detected *neutrinos* which allegedly travelled faster than light. Several years ago, a similar nonsensical attempt had been tried at the Fermi large hadron collider in the USA. Fortunately, these attempts at deception failed because there are enough sound scientists around who do not believe in fairy tales. Dear cosmologists, do you not consider yourself too good for such unscientific shamelessness?

HOW THE BIG BANG THEORY CAME INTO BEING

Let us start at the origin of the Big Bang theory and the postulated „expansion" of space and time. Therfore, we go back into the 1920s. This is the time when the tiresome Big Bang theory began. Einstein himself was not at all enamoured of it. He and most of the scientists found the theory abominable. Nevertheless, there was a Belgian priest, *Georges Lemaitre*, who had the intuitive notion that the universe began as a type of „*primordial atom*". This description alone must have caused shivers to run down Einstein's back because a serious physicist finds it hard to picture anything with such an extraordinary unphysical description. Lemaitre´s notion was just pure nonsense to Einstein, and devoid of any sound physical basis. He found the physical understanding and background knowledge of Dr. Lemaitre, as he said to himself, simply atrocious. Bear in mind that physics was, at that time, going through a period of rapid development and Lemaitre was not involved in this dramatic change from classical physics towards modern relativistic physics. His primeval atom approach was of strictly philosophical nature and had no basis in physics, despite of the observed redshift phenomenon! It was just a nice naive idea, a kind of fairy tale, solely based on a simple classical interpretation of the observed redshift of the light of far off galaxies and in Einstein's view not worthy of serious consideration. Ironically, Lemaitre would have remained completely unknown without Einstein´s influence. Among other astronomers *Edwin Hubble* observed an increasing redshift of celestial objects the further they are away from us. He knew very little or nothing about Einstein's general theory of relativity (however, this changed during Hubble´s lifetime). He had this in common with Lemaitre. This led to the wrong assumption, that the universe probably would expand. Over the first decades of the 20th century, the vast majority of astronomers considered Einstein's relativistic considerations and calculations very theoretical and strange mental exercises. They felt much more comfortable with classical physics. Again, it should be borne in mind that at the time, the world of physics in general and the world of cosmology in particular, were undergoing a rapid and dramatic change. A paradigm shift had just occurred and this process needed time. For most of his contemporaries, Einstein's relativistic considerations and calculations were out of touch with reality and hard to understand. A small group of top European physicists discussed all innovative ideas and calculations in the physical field
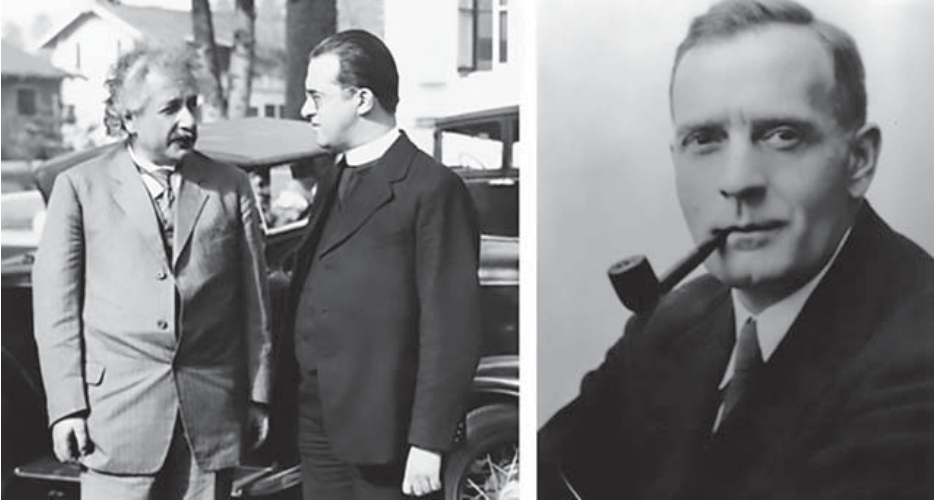
Fig. 3 | From left to right: Einstein, Lemaitre, Hubble

within the *Solvay Conferences* in Brussels and, indeed, recognized the enormous consequences of Einstein's relativistic ideas, especially in regard to the universe. However, there were still plenty of physicists all around the world who clung to the laws of classical physics. One of these physicists was *Edwin Hubble*. He was completely isolated from the discussions of the top European physicists. The hot spot of physical science was definitely Europe with a focus in Central Europe, especially in Germany. At the time US physicists were, so to speak, „very much in the shadows". Today the aspects of relativistic physics have long been integrated into the world of physics. Relativistic physics is one of the standard tools of every serious physicist (as it should be). At the time, however, it took some time before most physicists, and astronomers in particular, accepted the new physics. Mr. Hubble observed an increasing red shift of the spectral absorption lines of galaxies, depending on their distance from Earth. Hubble then presented, based on his observations and on the classical physicsy, the following *Hubble equation*:

$$v_{\text{rad}} = z \cdot c = H_0 \cdot r$$

H_0 describes the Hubble constant (70 km/s/Mpc). It says that for every added distance of 3.26 million light-years (one mega parsec *Mpc*), the

„radial escape velocity v_{rad}" of galaxies is expected to increase by 70km per second (Hubble used a value of about 500 km/s/Mps). The above equation is still used today for determining the distances „r" of faraway objects. According to Hubble´s equation the „radial escape velocity" allegedly increases with increasing distance „r" of observed objects. „z" is the redshift factor of the absorption lines within the spectra of the observed galaxies (see item 9, appendix). According to the above Hubble equation, the alleged escape velocity becomes „superluminal" at z > 1. Nowadays, for example, we can already observe objects with values of z > 8. That means that these objects would have a „radial escape velocity" of more than 8 times the speed of light! The nonsensical results of the Hubble equation were, amongst other reasons, cause for the postulation of the so-called *theory of cosmic Inflation* (see item 2, appendix). According to this theory, immediately after the alleged Big Bang, the space of the universe must have expanded „*superluminally*". This is a perfect example of how nonsensical theories are created simply to „justify" the Big Bang theory. So-called *Cepheid variables* (13), were used to „calibrate" the Hubble equation. These are stars which are periodically fluctuating in size and luminosity. It was believed that one could derive their absolute (actual) brightness from their fluctuation interval. Nowadays *type 1a supernovae*(8) are used to „verify" the distances of galaxies in our universe. It is believed that *type 1a supernovae* act as calibration stars that can be used to verify the *Hubble constant* by comparing the redshift of their *spectral absorption lines(9)* with the decrease in their apparent magnitude, resulting from their distance away from us. This is a very „rule of thumb" approach because we do not really know the absolute magnitude of these supernovae. As already mentioned, the so-called *Chandrasekhar limit* plays an important role in regard to *type 1a supernovae*, however, the *Chandrasekhar limit* is pure nonsense, as will be revealed explicitly in the course of this book. That in turn means that *type 1a supernovae* are not an applicable means of verifying distances in the universe. The Hubble equation is without any physical foundation and is, like the Big Bang theory itself pure nonsense, because it is presumed that the redshift of the spectral absorption lines is based solely on the classical *Doppler Effect(9)*. This effect is applicable only to objects that are relatively close to us but not at all applicable to the verification of all distances in our universe. Do not worry, we will explain this in more detail later.

AN ERROR WAS THE FOUNDATION FOR A COMPLETELY INCORRECT THEORY

According to Edwin Hubble the red shift of the *spectral absorption lines (9)* of distant galaxies was, at first glance, the unmistakable and striking proof of the expansion of the universe, as Lemaitre had anticipated. Even Einstein, who favoured the idea of a static universe (no expansion) visited Hubble at his 100-inch telescope on Mt. Wilson, USA, in the company of Lemaitre (1932).
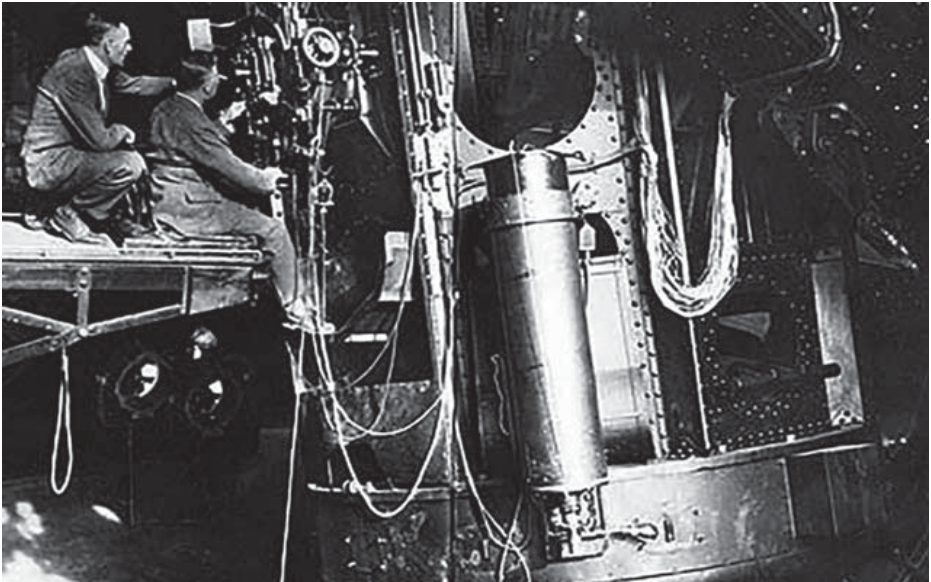
Fig. 4 | This photograph gives an idea of the huge size of what was the most powerful telescope in the world at that time

This telescope was the largest telescope that had ever been built at that time. Einstein's partner in life, his cousin Elsa, was not at all impressed by this telescope, even saying to Hubble during their visit to Mt. Wilson that Einstein did not need such a huge telescope to explain the laws of the universe rather than a simple piece of paper and a pencil would suffice. It was with this telescope that Hubble recognized that the „spiral nebulae" (galaxies) are separate galaxies and not part of the Milky Way. Of course, this was a sensation because up until then, many astronomers had believed that the Milky Way was the only

galaxy in the universe or that it even represented the entire universe. The well-known galaxies such as our neighbouring galaxy *M31* in the Andromeda constellation and *M51* (Whirlpool Galaxy) had originally been interpreted as star forming regions within the milky way.

Der Andromedanebel.
Nach einer Aufnahme von Ritchey.

Der Spiralnebel in den Jagdhunden.
Photographie von Keeler.

Fig. 5 | Photographies of M 31 and M 51 shot more than 100 years ago.

It was undoubtedly thanks to Hubble's observations that it was noticed that there are an enormous number of galaxies dispersed across our universe. Tremendous credit is owed to the engineers and craftsmen who created this telescope under extremely adverse conditions. At that time, it was a true masterpiece of human creativeness, a tremendous achievement and a huge step forward for astronomical observation. Generally, it is worth emphasizing that engineers play an irreplaceable and admirable role in space exploration through the creation of instruments and equipment. However, many cosmologists who persistently draw incorrect conclusions from the results of these inventions do not deserve such praise. To understand why Einstein suddenly seemed to support Lemaitre's philosophical approach, contrary to his convictions, it should be remembered that Einstein was, as already mentioned, in a difficult

situation, because the German dictator Adolf Hitler seized power at precisely the time when Einstein was visiting the USA in the company of Lemaitre and, thus, a return to Germany was tantamount to a death warrant for Einstein. The political orientation of Germany towards an extremely nationalistic dictatorship did not surprise Einstein and he observed the political orientation of his mother country with growing sorrow and even fear. It is beyond doubt that the powerful influence of the Roman Catholic Church could have been helpful for Einstein in finding secure asylum in the USA. This could have been the reason for Einsteins alleged acceptance of Lemaitres idea. Although, this remains pure speculation it should nevertheless be considered. From the physical view, it is absolutely impossible that Einstein would have warmed to a nonsensical Big Bang theory because Einstein himself already knew that the increasing redshift of the spectral lines of distant galaxies was not caused by the *Doppler effect*(9) but by a *relativistic gravitational redshift*(10) based on Einstein´s General theory of relativity. We will explain this in detail in the course of this book. The only statement Einstein made in respect of Lemaitre's Big Bang theory was: „I never heard such a beautiful creation story." However, a story is not inevitably an empirically provable fact but rather a tale. When Lemaitre firstly propounded his idea of the Big Bang in an auditorium, there was awkward silence. The only person who applauded Lemaitre was Einstein. This fact indeed arouses suspicion that Einstein possibly dealt with the Catholic Church to find a secure asylum. Einstein would never have done this if he had not been in a rather difficult situation and threatened by death. His fear was indeed founded; something that is confirmed by the holocaust which cost the lives of more than 6 million innocent Jewish people, men, women and children, in a country that seemed to have cultural values and a Christian foundation, the home of enlightenment philosophers and an exemplary centre of independent science (the author of this book is a German citizen). Is that not reason enough to „tolerate" a nonsensical Big Bang theory? Einstein could surely never have imagined that this nonsensical theory would „survive" for such a long time. He probably thought that sound physicists would debunk Lemaitre's idea with the help of empirical science, what a mistake. Astronomy at that time was rather speculative and Einstein was not at all speculative, he was very conscientious, endeavouring to understand things as systematically and

accurately as possible, even if this meant swimming against the tide and looking at things from entirely new perspectives. He did not care about his reputation. He wanted to discover the truth. Astronomy was only interesting to him as a means to prove his theories. This had already been the case when Einstein's postulation, that mass curves space, was proven by the solar eclipse in May, 1919. Astronomers had taken photographic images of stars which should have been hidden by the sun. The mass of the sun, however, bent the light of these stars so that they could be seen by observers on Earth. One of these observers was the famous British astronomer *Sir Arthur Eddington* who indeed fully understood Einstein´s theory of relativity.
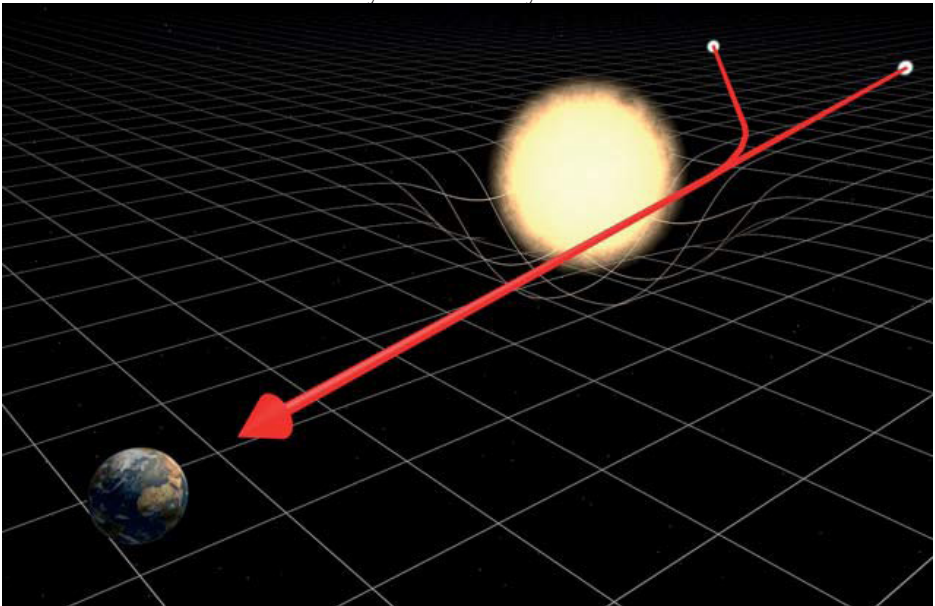
Fig. 6 | I Illustration of the curvature of space by the sun

Nevertheless, let us go back to the Big Bang theory. It supposedly seemed logical, from the classical perspective, to only interpret the redshift of the spectral absorption lines as a result of the Doppler effect which states that the spectral absorption lines of light-emitting objects, moving away from the observer, shift towards the long-wave range of the spectrum, that is, towards the red end of the spectrum. If a light emitting object moves away from the observer, its spectral absorption lines are more or less red-shifted, depending on the speed of the observed object. If an object moves towards

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the observer, the spectral absorption lines are more or less blue-shifted. This will be explained in more detail later. But there is another somewhat mysterious phenomenon. The further away the observed celestial objects are, the faster they seem to recede from us, as if accelerated by a magical force. Currently, this magical force is called *Dark energy*. As we shall see, a fatal incorrect conclusion. To cut a long story short, here we were dealing with a supposedly clear case of logic: the universe expands and the expansion increases in speed. Based on classical physics, this seems to be clear and conclusive evidence of the expansion of the universe, however, the universe does not behave solely according to classical laws, but rather adheres to relativistic laws, or, if you prefer, according to Einstein's laws which, at the time, were incomprehensible to most astronomers. At the time, the highly respected British astronomer Sir Arthur Stanley Eddington was one of the few astronomers, outside of the avant-garde group of top physicists, who understood the reasoning of Einstein. In addition, he was the person, who proved the General Theory of Relativity by his observation of the solar eclipse in May, 1919. This made Einstein world famous.

Fig. 7 | Participants of the Solvay-Conference in Brussels, 1927

The above photo of the participants of the *Solvay Conference in 1927* in

Brussels shows the pivotal contributors to the foundations of modern physics. They were the elite among physicists. What was discussed at this conference amongst this group of outstanding physicists, was, as already mentioned, beyond the vast majority of physicists at that time and certainly a closed book as far as most astronomers were concerned. Most astronomers and physicists were simply left out in the cold. Somebody assumed that Sir Eddington was probably one of three people in the world who could understand Einstein's theory of relativity. Eddington is said to have replied, with his British humour, that this could not quite be true, as he had no idea who the third person might be! This may help you to understand the haze of lack of knowledge, ignorance and mysticism in which the Big Bang theory began. Eddington had quite a lively exchange about relativistic phenomena with Einstein. As one of the leading astronomers of his time, he tried to describe the phenomena of the universe in a sound way, rather than in a philosophical or mystical way. Later we will see, that this was the reason for a vehement scientific dispute between Edington and Chandrasekhar, one of his students, who did not understand the consequences of Einstein´s theory of relativity. Chandrasekhar and his doubtful calculations and mystical ideas in respect of collapsing stars will be discussed in detail in the course of this book. However, in 1983 Chandrasekhar awarded a Nobel Prize for his wrong conclusions. Unfortunately, Eddington moved away from a sound relativistic interpretation of the dynamics of the universe towards a religious motivated interpretation. The following statements underline this assertion:

"I have much more sympathy with those critics who deny the nebular recession altogether, believing the observed radial velocities to be spurious." (page 86 "The expanding universe" 1933, Sir Arthur Eddington)

"Thus the only way of avoiding a great upset of ideas would be to explain away these radial velocities as spurious…For example, the light coming to us from an atom on the sun uses up some of its energy in escaping from the sun´s gravitational attraction, and consequently becomes slightly reddened…; this is the well-known shift predicted by Einstein." (page 15/16 "The expanding universe" 1933, Sir Arthur Eddington)

What Eddington understood quite well was not yet possible for Lemaitre

and Hubble. It went against Einstein's deepest convictions that the universe should not be static. His cosmological constant shows this. Einstein understood the principle of the universe well. He only lacked a small piece of puzzle to complete a total concept of cosmology. This will be explained later. Unfortunately, a certain *Mr. Gamow* set about calculating (based on pure guesswork) the temperature of the „residual glow" of a falsely postulated expanding universe that began with a Big Bang. Foolishly, on the basis of this calculation, the origin of background radiation (11) was completely misinterpreted and remains so to this day. Congratulations!
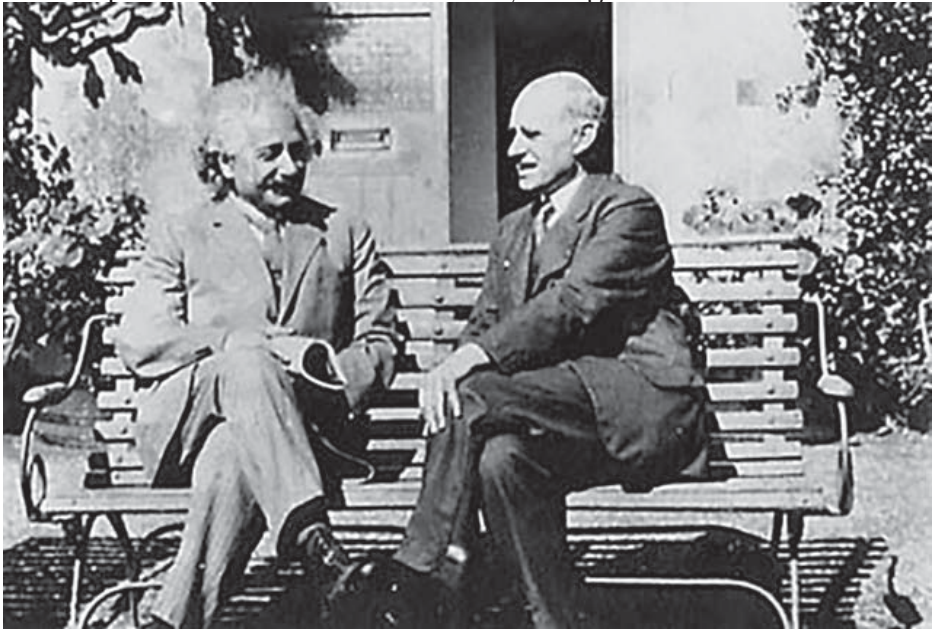
Fig. 8 | Albert Einstein and Sir Arthur Eddington in conversation.

Initially neither Hubble nor Lemaitre had, like most astronomers of their time, sufficient knowledge of relativistic phenomena, nor did they have comprehension of quantum and nuclear physics. Because of this lack of knowledge, astronomers were viewed in the same light as soothsayers, rather than as serious physicists. Physicists laughed at them. Astronomy was very speculative and offered plenty of room for absurd ideas. One could come up with wild conjectures because nobody could prove that things might work differently. This has not changed much even today. How else is it possible to postulate that 95% of the universe is made up of dark nonsense (Dark

energy, Dark matter) in our highly technological age and in spite of first-class engineering equipment? This cannot only be possible due to a lack of physical knowledge. No one can be that stupid. It seems as if there is a desire to deliberately load our universe with 95% esotericism so that only 5% can be empirically proven. As already mentioned, in recent times attempts had even been made to tell us that the *speed of light* and the *gravitational constant*, might perhaps be variable. Indeed, in 2011 some scientist of the research centre CERN in Geneva tried to make the world believe, that they detected *neutrinos* which allegedly traveled faster than light (however, this attempt of deception failed). That in turn would mean that the pathetic remainder of a universe of which only 5% would be empirically accessible is open to pure speculation as well. This again would indicate the deathblow for empirical science. If this approach is successful, it is only a matter of time before inquisitorial rigor is used to block the progress of empirical science indeed, if it is not already too late. If no challenge is made to reduce the allegedly discovered gravitational waves of a Big Bang that never happened to absurdity, the floodgates for any type of nonsense will truly open and then dark times will really come! From today's perspective, the persistence in thinking patterns of classical physics as it was in Hubble's time is quite understandable. The fact that the former view, in spite of all of today's knowledge and technical means, still holds and is even supported by the award of Nobel Prizes is inexcusable. One of the most idiotic ideas of all time, the *theory of cosmic inflation (2)*, was even fabricated to uphold the Big Bang theory in the face of background radiation measurement results. This theory has absolutely nothing in common with sound physics; it contradicts itself and is an outrageously bold and dirty trick to try to explain the observed wavelength of the background radiation. In fact, the background radiation actually disproves the Big Bang theory. High-resolution facilities for measuring background radiation, such as *WMAP, PLANCK* and *ALMA*, will seal the embarrassing demise of the Big Bang theory in the near future and a whole branch of science will be revealed to be ridiculous. We now know how the extremely annoying Big Bang theory began and how it was established in the field of cosmology. The Big Bang theory is like an obstinate cancerous ulcer which is good for absolutely nothing. However, even today, young students of astrophysics are sworn into the Big Bang theory. In the following pages we will consider the entire issue in an accurate manner and, this time, it will be based on sound physics.

KARL SCHWARZSCHILD AND THE BLACK HOLE

In 1916, the German physicist Karl Schwarzschild formulated what later became known as the Schwarzschild solution *based on Einstein´s general theory of relativity. This solution, which was formulated almost 100 years ago, describes space curvature in the vicinity of an extremely dense and massive object. As we shall see later, the* Schwarzschild solution *can even help us to describe our universe without the assumption of a Big Bang. In spite of Schwarzschild's relativistic solution, the misleading term „black hole", which is reputed to describe extremely dense matter concentrations solely on the basis of classical physics, was introduced in the following decades and even now is still accepted and propagated in the field of astrophysics. This happened although Schwarzschild had described the phenomenon on the basis of Einstein´s general theory of relativity. Thus, it was in no way justifiable to introduce the erroneous term „black hole" which is derived solely from classical physics. Unfortunately, Schwarzschild was killed during World War I , shortly after he released his solution.*

Stephen Hawking pulled no punches when he stated that „black holes" cannot exist in our universe. However, his claim appears to have fallen on deaf ears. The term „black hole" suggests that there are kind of holes in our universe through which something can disappear, in the same way

that a hole in a bucket allows water to flow out. The edge of a „black hole" is, according to the present consensus, the „event horizon". It is assumed that an object passing beyond the „event horizon" of a „black hole" would incur the consequence that the information, i.e. the energy, of the object would leave the universe. The object would fall into the nothingness of a singularity, which is deemed to be a point without extent. Just as with a boat, which is inevitably doomed to plunge into the abyss if it comes too close to the edge of a roaring waterfall, everything that comes too close to the edge of a „black hole" would plunge into the seemingly endless abyss of a singularity. It is even claimed that it is possible to fall through such a „hole" into another universe. However, this notion is false and misleading, showing that most of the key players in cosmology have no understanding of the true background of what is erroneously called a „black hole". In the course of this book , we at first adopt the terminology which is used in connection with „black holes", such as „inside" or „outside of a black hole" and „this side of" and „beyond the event horizon", in order to allow you to understand the classical origin of the wrong interpretation of the phenomenon „black hole". The true background will be revealed in the course of this book. Classical „black holes" cannot exist in our universe, but relativistic approximations to a very extreme state of space, time and mass can. In fact, the Schwarzschild radius clearly defines a non-exceedable inner boundary of our universe beyond which is neither space nor time

nor mass! Thus, absolutely nothing can escape from the universe but is only able to approach the inner boundary of the universe. As long ago as 1916 , this was precisely described by Karl Schwarzschild, before dilettantism and esoterism became widely accepted in the field of cosmology. The phenomenon that is erroneously referred to as a „black hole" is of enormous importance even in respect to the universe itself. Therefore, we will approach this topic on a step by step basis so that it is ultimately possible to understand the dynamics of our universe without the preposterous assumption of a Big Bang. In the course of this book , the term „black hole" is always set in quotation marks to indicate that „black holes" are a myth and can not exist in our universe. Instead of the misleading term „black hole", which is solely based on classical physics, we will introduce the the term black sphere, which is based on relativistic physics, as we will recognise. This will allow us to find mould-breaking insights and to open the door to a really breathtaking cosmology, based on sound physics.

To illustrate the impossibility of the Big Bang theory, we have to go into detail on the phenomenon erroneously called a „black hole". Even though you might think that „black holes" have nothing in common with the Big Bang theory, we will prove the contrary. We shall see that the phenomenon referred to as a „black hole" is a fundamental phenomenon of the universe and provides the basis for a profound physical statement that is of equal importance to that of the Einstein equation: $E = mc^2$, which expresses the equivalence of mass and energy. The equation defining the Schwarzschild radius of a mass, indeed expresses the *equivalence of space and mass,* which will be explained later on. In the following, we will consider the „black hole" phenomenon

based exclusively on *classical physics*. Not until later will we consider the phenomenon in terms of *relativistic physics* additionally and develop a completely new interpretation of what is falsely called a „black hole“, thus, we will be able to solve *Hawking's problem* of which more later. However, we must adopt a step-by-step approach to the problem to understand how it came about that a completely wrong interpretation has become accepted in the field of cosmology.

To understand the background fully, we must go back to the start of considerations regarding what is referred to as a „black hole“. Using *Newton's law of gravitation*, it is easily possible to derive the specific radius of a defined mass that must be attained by this mass to prevent even light from escaping. Thus, the gravitation of such a highly compressed mass is so great that even light cannot escape. This is a very simple, classical calculation. Imagine a bullet which is shot into the sky. The bullet could, with sufficient velocity, leave the gravitational field of the earth and a return to earth would be impossible. The so-called *escape velocity* of a mass in order to leave the gravitational field of the earth only depends on the *mass* and the *radius* of the earth and is about *11.2 km/sec*. For example, the escape velocity on the surface of the sun is about *617 km/sec*. This velocity allows an object, starting from the surface of the sun to even exit the solar system. This is given by the equation:

$$v = \sqrt{\frac{2\,GM}{r}}$$

The complete derivation of this equation can be found in the appendix. „G“ stands for the gravitational constant, „M“ stands for the mass of an object and „r“ is the radius this object.

However, how can we calculate the specific radius of any defined mass, assuming that the escape velocity is the speed of light (*300.000 km/sec*). We simply have to substitute „v“ *(velocity)* with „c“ *(speed of light)* in the above equation. If we solve this equation for „r *(radius)*“, the result is the equation allowing us to derive the specific radius of a defined mass which will not allow light to escape, thus , we have derived the equation which

is called, in acknowledgement of Karl Schwarzschild, the *Schwarzschild radius equation* (not to be confused with the *Schwarzschild solution*) .

$$r_S = 2\,\frac{GM}{c^2}$$

This is trivial classical school physics. As long ago as 1784 , the British scientist and clergyman, *John Mitchell*, and then in 1796, the French mathematician and astronomer, *Pierre-Simon Marquis de Laplace*, pondered upon the nature of a mass such that its gravitation would be strong enough not to allow light to escape. These objects were later called „black holes" because they appear black due to the fact that light cannot escape. It was left completely vague as to whether such black objects could actually exist in the universe or not. There was also no mention of whether an object could shrink to its *Schwarzschild radius* or even to a radius less than it. Until now our considerations have been based solely on *classical physics*. However, Karl Schwarzschild considered the whole phenomenon based on the *general theory of relativity* as well . Schwarzschild had no doubt that the Schwarzschild radius is neither attainable nor exceedable! Unfortunately, Karl Schwarzschild died during World War I. He would certainly have discouraged incorrect esoteric concepts in the field of cosmology and would certainly have prevented the propagation of a theory of an exceedable „event horizon", a „singularity" theory and the postulation of so-called „wormholes". Wormholes are reputed to be a type of short-cut (via „black holes") from one point in the universe to another point or even to other universes. However, these wormholes are hogwash and merely good for science fiction movies.

With the help of the derived *Schwarzschild radius equation*, we are able to consider defined masses in regard to their specific Schwarzschild radius. For example, the entire mass of the earth would have to be compressed into a marble of approximately *2 cm in diameter* to call the earth, in the classical sense, a „black hole". In this case light could not escape from earth due to its huge gravitational potential.

Fig. 9 | Karl Schwarzschild

Once more, it is important to keep in mind that in regard to „black holes" terms like „*inside and outside of a black hole*" or „*this side of and beyond the event horizon*" are frequently used. Furthermore, it is very important to understand that the classical interpretation of „black holes" is based solely on classical physics and that relativistic effects are not yet included. The Schwarzschild radius is in accordance with *relativistic physics* a *non-exceedable inner boundary of our universe*. Nothing and nobody can ever exceed this boundary. This contrasts strongly with the classical interpretation of „black holes" that allows objects to exceed the „event horizon". The classical interpretation of „black holes" is very interesting nevertheless, as it allows us to get some insight which is useful in debunking some of the errors pertaining to classical „black holes". We already know that, according to the classical interpretation, a „black hole" is formed by a highly compressed mass that fits „into" its „Schwarzschild volume" which is defined by the Schwarzschild radius of this particular mass. In principle a collapsing mass is, in the classical sense, able to shrink beyond its specific Schwarzschild radius. Since it is said that no information, i.e. event, can escape from such a „black hole", the sphere which is defined by the Schwarzschild radius is called „event

horizon". It is said that no event „beyond this event horizon" can be directly observed and, thus , any event „inside the black hole" would be forever hidden to us, because no information can leave a „black hole". That is the classical interpretation of the „event horizon". Later we will recognise that the terms in quotation marks conceal the actual character of what is wrongly called „black hole". However, for now we continue with our purely classical consideration. The Schwarzschild radius is, as already mentioned, derivable with the help of a simple calculation based solely on classical physics. In spite of Einstein's general theory of relativity and in spite of Schwarzschild's solution describing space curvature in the vicinity of an extremely compressed mass, the strictly classical notion of „black holes" is propagated as the latest research, which is a disgrace. Put simply, in respect of the „black hole" phenomenon, neither the general theory of relativity nor the Schwarzschild solution has been applied. It is even claimed that Einstein's laws are not applicable to „black holes". This is a travesty, because it should be stated that instead of applying Einstein's laws, the astrophysicists prefer to get lost in esotericism and some of them even contradict the general validity of physical laws in regard to „black holes"! The resulting impression is that so-called "modern cosmologists " are trying to remove empirical science from the picture. To an outside observer, solely the gravitational potential of a „black hole" is detectable and of course the effects caused by this gravitational potential. According to classical physics, the volume of a „black hole" (*Schwarzschild volume*) is clearly and firmly defined by its mass. The greater the mass of a „black hole", the larger the „*Schwarzschild volume*" of the appropriate „black hole". The larger a „black hole", the more mass it „contains", the more the mean density of a „black hole" decreases. This may sound absurd, but it is indeed a fact on the basis of classical physics. This is because the equation in order to determine the volume of a sphere contains the term „r^3".

Volume of a sphere:
$$V = \frac{4}{3}\pi r^3$$

As we know from the *Schwarzschild radius equation,* double the mass of a „black hole" means double the Schwarzschild radius. This is called a

linear ratio. The volume of a „black hole", however, increases with the third power of „r" (this means „r³"). The non-mathematically oriented readers should note that this term stands for r·r·r. Thus, the *Schwarzschild volume* of a „black hole" increases exponentially relative to its mass and, thus, exponentially relative to its Schwarzschild radius. Double the mass of a „black hole" means double the Schwarzschild radius resulting in an *eight fold(!)* increase in *Schwarzschild volume*. As you can see, the space occupied by a „black hole", i.e., occupied by the *Schwarzschild volume*, increases much more rapidly (*exponentially*) than the respective Schwarzschild radius. Thus, in the classical sense, the mean density of a „black hole" indeed decreases with increasing mass of a „black hole" and not vice versa. This in turn means, that the gravitational potential of a „black hole" decreases" the more mass it „contains", thus, the larger it is. This might confuse you, however, it is a fact.
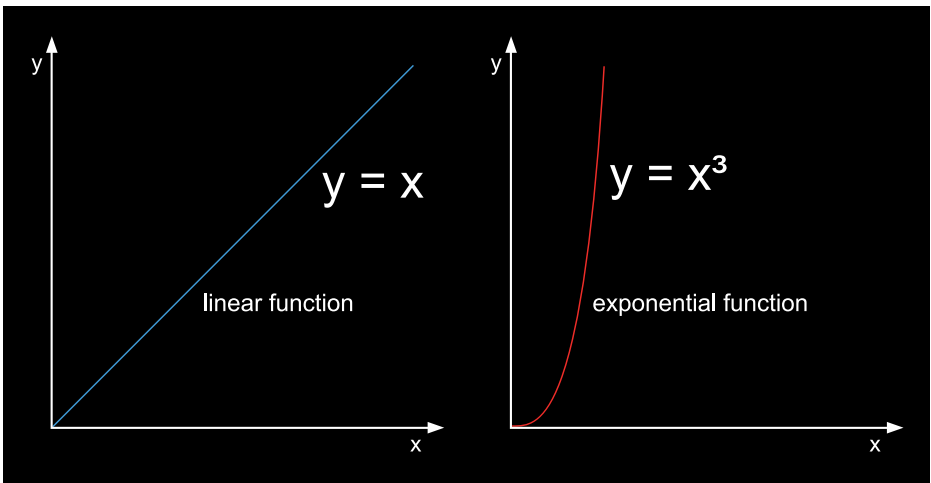
Fig. 10 | Example of a linear function and an exponential function.

As already mentioned, „black holes" can have a monstrously high mean density and, thus, a gigantic gravitational potential, but this is not always the case. As preposterous as it sounds, „black holes" can even have a far lower *mean density* than cotton candy due to the exponential increase of the Schwarzschild volume of a classical „black hole" the more mass it „contains", but more on that later. Karl Schwarzschild derived a relativistic solution to describe the space curvature in the vicinity of

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„black holes" (in his time the misleading term „black hole" was not conceived yet and Schwarzschild would not have been foolish enough to even consider such a nonsensical term). Whether „black holes" could exist or not, was anybody´s guess. There was no talk of *singularities*, i.e. an infinite reduction of all three spatial dimensions (length, breadth, height) towards zero and stopping of time. This was not an option for Schwarzschild. *The reality of our universe, described by physical laws, does not allow infinities at all!* Thus, singularities are not allowed and are not possible in our universe, because a singularity means a shrinking of spacetime to an infinitely small point (point singularity). In the course of this book , it is proved that singularities are not possible.

If one considers solely the aspect of the fundamental, classical *law of conservation of angular momentum*, it is not possible that a star can shrink infinitely. Why not? There is, for example, no object in the universe that has no angular momentum. If an object were to collapse continuously, it would spin faster and faster. The ultimate limit of the increase in the speed of rotation would finally be the speed of light. This process is based on the same principle as is observed when a figure skater, whose arms are stretched, rotates around his longitudinal axis, beginning to pull his arms together (*Pirouette*). The effect is an increasing spin. .
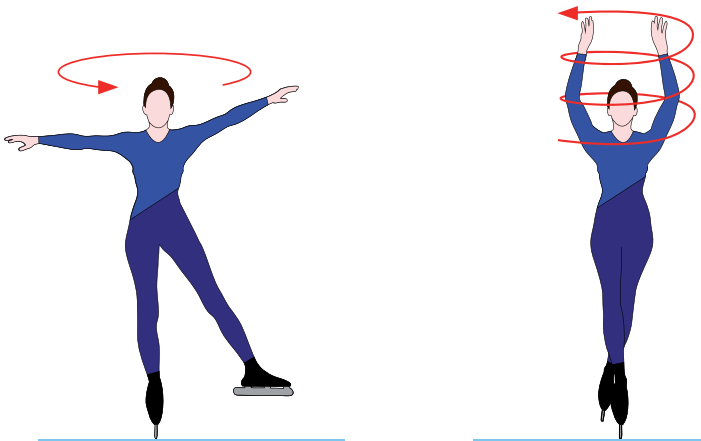

Fig. 11 | The effect of conversation of angular momentum using the example of a figur skating spin

THE CONSERVATION OF ANGULAR MOMENTUM, THE „BLACK HOLE" AND THE KERR PARAMETER

At the beginning of this section, it is necessary to point out again, that the considerations and calculations in this chapter are made solely on the basis of *classical physics*. Of course, enormous relativistic effects occur, as described in Einstein´s theory of relativity, when an object approaches the speed of light or is influenced by an extremely massive object. However, we will refer to this in a later section. Those relativistic effects are perceivable by an observer *outside* of the following considered systems. For now, we assume that we are located *on* the considered rotating collapsing star itself. In a later section, we will change to the position of an observer, watching the rotating collapsing star from the *outside*. It is the principle of relativity that effects are always considered from two different points of view, i.e., from two different reference frames. Our interpretations are relative, depending on the reference frame. Everything that is described in this section, refers to the collapsing rotating object itself (*classical point of view*) and provisionally ignores the observable relativistic effects perceptible by an outside observer (*relativistic point of view*).

The *classical point of view* allows us to consider the so-called „*Chandrasekhar limit*". It is said that the *Chandrasekhar limit* is the maximum possible mass of so-called „*white dwarf stars*" (*1.46 times the mass of the sun*). Stars with a larger mass than this defined mass limit should, according to Chandrasekhar, collapse into a „singularity", i.e. into the state of a „black hole". Later we will see that the *Chandrasekhar limit* also plays an important but nonsensical role in the field of cosmology concerning the Big Bang theory as well. Chandrasekhar considered the process of a collapsing star based solely on *classical physics*. We will proceed in the same manner just to find out how Chandrasekhar's calculation could lead to his limiting mass. Interestingly, the so-called „*Kerr metric*", which is reputed to describe „*rotating black holes*", is based on the same logic. We will refute both, the *Chandrasekhar limit* and the *Kerr metric* in the following, but first we must look at the problem in more detail. Based on *classical physics*, a continually collapsing star with an angular momentum (all stars have an angular momentum as they rotate) would

finally „stop" its collapse upon „reaching" the speed of light, which cannot be exceeded. This would occur first at the equator of the rotating star, due to the fact, that the speed of rotation of a star is always greatest at its equator. In the simplistic classical sense, a further contraction of the star would not be impossible because the physical laws of our universe do not allow a higher speed than the speed of light. Admittedly, this is a very simplistic approch but it serves a purpose that will be illustrated shortly. We must follow Chandrasekhar's simplistic classical logic to clarify the nonsensical background of the *Chandrasekhar limit*. Thus, we will continue with our somewhat simplistic consideration. The collapse of a rotating star would be „stopped" in the simplistic classical sense once the speed of light was „reached", because this speed cannot be exceeded under any circumstances.

Chandrasekhar also knew that the speed of light cannot be exceeded, and in reality it cannot even be reached. Solely the fact that the speed of light cannot be exceeded was taken into account by Chandrasekhar in his simplistic classical approach and as a consequence of this , the contraction of a rotating collapsing star cannot go on for ever, otherwise the speed of light would be exceeded. As stated by Einstein, this is impossible just as much as it is impossible to accelerate a spaceship to the speed of light, irrespective of how much one „pushes the throttle forward". The energy of the entire universe would not be sufficient to accelerate a spaceship to the speed of light, otherwise, the spaceship could leave our universe which is not allowed under no circumstances. Returning to the collapsing star. Due to the fact that the speed of light is the ultimate speed limit in our universe, the collapse of a burnt out star would initially come to an „abrupt end" at the equator of the rotation axis of the collapsing star. This would then gradually continue over the other latitudes towards the poles (**Fig. 12**) while a ring torus would be formed which allows for the speed of light being „reached" at all latitudes.

Providing clarity to you, it is revealed at this point, that no star can rotate at even close to the speed of light. All the previous considerations are pure nonsense, but Chandrasekhar proceeded in exactly that way anyway, in a purely classical way. Nature uses a simple „trick" to prevent

a collapsing star from ever rotating at the speed of light. This „trick" is called *centrifugal force*. We will clarify this in more detail throughout this book but at this point it is mentioned that our universe would not exist without this „trick". If a collapsing star was actually able to rotate at the speed of light, the universe would instantly disappear because the star, in accordance with Einstein´s laws, would assume an infinite mass and, therefore , an infinite gravitational potential that would suck in the universe instantaneously, whithersoever. Do not worry, this is impossible, because otherwise you would not be reading this book and God would have destroyed his own creation. God is clearly not stupid , however, most of the cosmologists obviously are, because they want to make us believe that everything „inside" a „black hole" shrinks to the size of an infinitely small point without extent, thus, becoming a „*singularity*" in which the past, the present and the future would merge. This is what is called a *space-time singularity*. Such a singularity would, according to the consensus of so-called „sound scientists", create a „wormhole" (a kind of tunnel through spacetime) by means of which one could travel through our universe and even visit other universes. Wow! Isn´t this a great understanding of sound science?

A singularity is, however, as we shall see, pure esoterism. Singularities are based on the unproven, fabricated and fallacious philosophical considerations of the *Indian-born Brahmin Chandrasekhar*. Similar to the unfounded, philosophical considerations of George Lemaitre, who pondered on the beginning of our universe in form of a primeval atom, Chandrasekhar philosophised about the shrinking of burnt-out stars into nothingness. These are really breathtaking philosophical reflections, nevertheless they have nothing in common with sound physics. It is completely incomprehensible that the so-called „modern cosmologists" are trying to substantiate these clearly preposterous philosophical ideas. This only works if one uses dubious tricks. This book was written to expose these tricks. But one step at a time. The most important basis of calculation in order to describe rotating celestial bodies, collapsing under their own gravitational force, is the fundamental *law of the conservation of angular momentum*.

$$L = \frac{2\pi r^2 M}{T} = constant$$

"L" stands for the angular momentum, which is based on the mass "M", the radius "r" and the rotational period "T" of a rotating object. The appropriate angular momentum is always constant, which is why the rotational speed of a shrinking, rotating object increases.

Since many readers will be inclined to stop reading when faced with such equations, it is important to keep in mind that these equations are inserted for the readers that are interested in mathematics and physics, so that the statements of this book can be verified. It is important to keep in mind that our claims arise from the factual laws of physics, meaning that these claims are verifiable. It is not our intention to practise esotericism, as seems increasingly to be the case in the field of cosmology. But do not worry, all statements in this book will be explained, even without devoting attention to these equations. For you, only the results are of importance.

For example, let us plug the mass of the earth „M_E", the radius of the earth „r_E" and the rotation period of the earth (T_E = 24 *hours*) into the above equation. The result is an angular momentum of:

$$L_E = M_E 2\pi \frac{r_E^2}{24\,h} = 1{,}7821\,...10^{38}\,kg m^2 s^{-1}$$

If we assumed that the earth could shrink towards its Schwarzschild radius" (r_{SE} *about 9 mm*), the constant angular momentum „L_E" would result in a rotation period of *T = 1.71 ...·10⁻¹² seconds*. Thus, according to the following equation, the speed of rotation would be more than **1100 times the speed of light!** This is of course not allowed in reality due to relativistic laws.

$$v = \frac{2\pi r_{SE}}{T} = 3{,}31\,...\,10^{11} m s^{-1}$$

Written-out: 331000000 km/second
Speed of light: 300000 km/second

However, if we suppose (*classical consideration*), that the earth could shrink to the size of a marble with a diameter of *1.8 cm,* which is double the Schwarzschild radius of the earth) it would rotate with the 1100-fold speed of light. This is, of course, not possible in reality. Based on the theory of relativity, we know that the speed of rotation can only approach the speed of light asymptotically, that means that only a gradual approximation to the speed of light is possible, but the speed of light can never ever be reached and it most certainly can never be exceeded. Thus, if the earth could indeed collapse towards its Schwarzschild radius (which is not possible in reality, because the mass of the earth is too low), the Schwarzschild radius could not be reached, because the speed of light would be „reached" at a radius of about *10 meters*! Do not forget, this is a very simplistic classical consideration, but we must proceed this way to reveal some mistakes regarding „black holes".

Let us consider the sun. Since the sun is a star, it is an even better example for our considerations of massive, collapsing burnt out stars. Although the mass of the sun is too low to form a „black hole"(this will be explained later on), the sun will serve our purposes perfectly, because we know its *mean speed of rotation*, its *mass* and *diameter* fairly accurately. It should be mentioned briefly that the rotation period of the sun is about 25 days at its equator and about 31 days at its poles. Therefore, one full rotation of the sun takes 25-31 days, depending on latitude. But this is true only for the solar matter which is located in the upper 30 percent of the solar radius. Below about 0.7 of the solar radius, the rotation period is 27 days, since the situated matter behaves as a rigid body. The matter above behaves malleably or like a liquid, and rotates with different speeds at different latitudes. In the following calculations, we will use a mean rotation period of 27 days. This is also quite a good mean value for the upper portion of the sun.

The Schwarzschild radius of the Sun is about *3 kilometers*. This means that the sun would have to shrink to at least this radius to become a „black hole", in the classical sense. It must be clarified once again that we are considering rotating collapsing stars on the basis of classical physics in order to explain the mistakes which were the basis for two Nobel Prizes. So, if we suppose that the speed of rotation of a collapsing

star could actually reach the speed of light, the star would form a *ring torus*. The shape of a ring torus theoretically allows the entire collapsed star to rotate with the speed of light, regardless of the latitude. This ring torus shape can be easily derived and results in the following equation (*the derivation of this equation is to be found in the appendix*):

$$r = \cos a \ \frac{L}{Mc}$$

"cos a" has the value „1" at the sun's equator and the value „0" at the sun's poles, thus , the result of the above equation is the shape of a ring torus.

We call the boundary defined by this radius the "*classical speed of light contraction boundary*", because in the classical sense the speed of light sets this classical contraction limit. If one looks at the following illustrations (**Fig. 12 next page**), this boundary is depicted by the yellowish ring torus (a ring torus resembles a doughnut, as you can see). Thus, the to the utmost collapsed sun would form a ring torus if we suppose our sun could actually collapse to its "*classical speed of light contraction boundary*".

$$L = \frac{2\pi r^2 M}{T}$$

$$v = \frac{2\pi r}{T} \implies T = \frac{2\pi r}{v} \implies T = \frac{2\pi r}{c} \quad \text{when} \quad v = c, \ \text{follows}$$

$$r = \frac{L}{Mc}$$

The term „*L/Mc*" is also known as the *Kerr-parameter*, which plays an important role in describing so-called „rotating black holes". In order not to confuse you, we will come back to this topic later. However, we will see that the *Kerr metric*, as well as the *Chandrasekhar limit*, are pure nonsense.
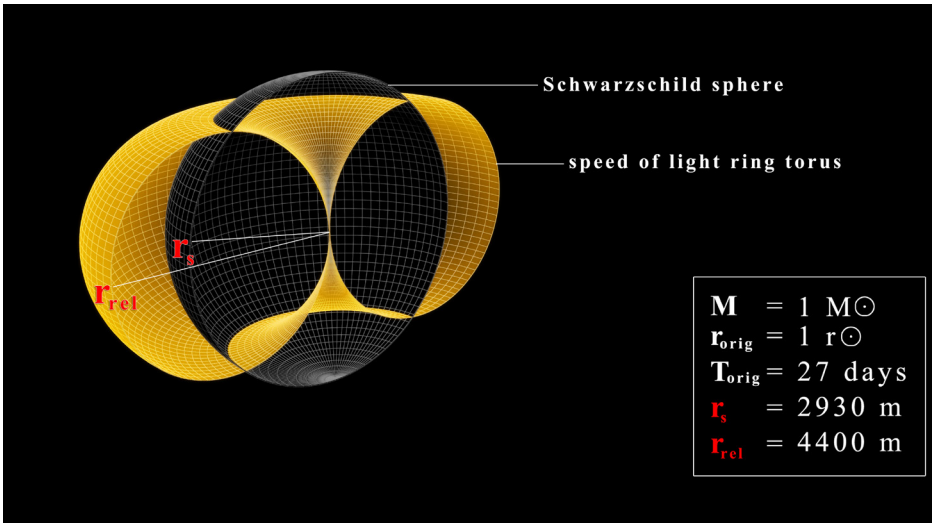
Fig. 12 | This illustration shows a collapsed star that has the mass of the sun, an original rotation period of 27 days and an original radius of one solar radius. The Schwarzschild radius is 2930 m and the *class. speed of light contraction boundary* is 4400 m at the equator. This shows that the collapsed star is not able to reach the Schwarzschild radius (in the classical sense) at its equator due to its angular momentum. At northern and southern latitudes, the speed of light contraction boundary gradually approaches the Schwarzschild radius and even „plunges under" the Schwarzschild radius (according to classical calculations) at a latitude of about 48°.

Upon reaching this radius (*classical speed of light contraction boundary*), the rotation speed reaches the speed of light. A further contraction is impossible. The *classical speed of light contraction boundary* of the collapsed star, containing the mass of the sun, decreases with increasing northern or southern latitude until the Schwarzschild radius of the star is finally reached (this is a purely classical calculation) . In the area of the 48th degree of latitude, the *speed of light contraction boundary* coincides with the sun's Schwarzschild radius. Solely based on classical physics, the star is able to shrink, from this latitude onwards, to less than its Schwarzschild radius. At this point, it needs to be noted again that this is a very simplistic classical approach. However, it is necessary to explain thoroughly the facts in order to shed light on the issues found within the *Chandrasekhar limit* and the *Kerr metric*. As already mentioned, Einstein´s laws tell us that the mass of an extremely rapidly rotating object increases significantly, which again increases the Schwarzschild radius. This of course has an effect on the space-time distortion. However, this is a relativistic effect but we are treating the subject in this section solely on the basis of classical

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physics, assuming that we are on the collapsed star itself and that there would not be any recognisable relativistic effects. In this case, the mass does not change. Not until later we will see that the mass of a rotating object indeed changes, depending on its speed of ration. However, Chandrasekhar interpreted collapsing stars in the classical way as we do here. For this interpretation he was severely criticised by his mentor Sir Arthur Eddington because he did not agree with Chandrasekhar's postulated singularity and the Chandrasekhar limit, instead urging him to take into account relativistic effects. Furthermore, Eddington was convinced that a force would exist that prevents stars from rotating with the speed of light. He was right. This force is called *centrifugal force*. In retrospect, it is hardly surprising that Chandrasekhar's career did not progress in Europe because he was not taken seriously in Europe. Instead, he enjoyed a much more promising career in the United States. Finally, he was awarded the Nobel Prize for his wrong and simplistic considerations in regard to so-called *White Dwarfs*.

THE ERROR BEHIND THE KERR METRIC AND THE CHANDRASEKHAR LIMIT

The *classical speed of light contraction boundary* with its term „*L/Mc*", is, as already mentioned, also the basis of the *Kerr metric* which describes so-called „*rotating black holes*". However, „rotating black holes" do not exist in our universe. We have already addressed why: the *centrifugal force* does not permit a rotation at the speed of light, thus, reaching a radius that is defined by the term „*L/Mc*". This is absolutely impossible. It must be repeated that as a consequence of this fact, two important pillars of so-called „modern cosmology", the *Kerr metric* and the *Chandrasekhar limit*, are now omitted.

We now know that a collapsing star rotates faster and faster, the more it shrinks. This leads to an increasing centrifugal force the more the star collapses. At a defined radius the *gravitational force* of the collapsing star and the *centrifugal force* are balanced. This means, that a further contraction is absolutely impossible. The balance of the opposed forces occurs well before reaching the *classical speed of light contraction boundary*. That indicates: **no rotation at the speed of light, no singularity in space-time, no Kerr metric, no „rotating black holes", no Chandrasekhar limit.** We call the boundary which prevents a speed of rotation with the speed of light the *balanced forces contraction boundary*, because at this boundary, the *centrifugal force* and the *gravitational force* of the collapsed star are balanced. The equation is as follows:

$$r \; = \; \cos a \; \frac{L^2}{GM^3}$$

The exact derivation of this equation can be found in the appendix.

The term $\frac{L^2}{GM^3}$ defines the radius at which the *centrifugal force* and the *gravitational force* of a collapsing star are balanced and a further contraction is impossible.

The *balanced forces contraction boundary* is always positioned well in front of the *classical speed of light contraction boundary*. As depicted in the following figure (Fig. 13), one can see the two contraction radii (blue and yellow torus), based on the mass of the sun, the original radius of the sun and the original mean rotation period of the sun (27days). Furthermore , you can see the Schwarzschild radius (black globe) of the sun. Again, it is noted that this is an approach based solely on classical physics.
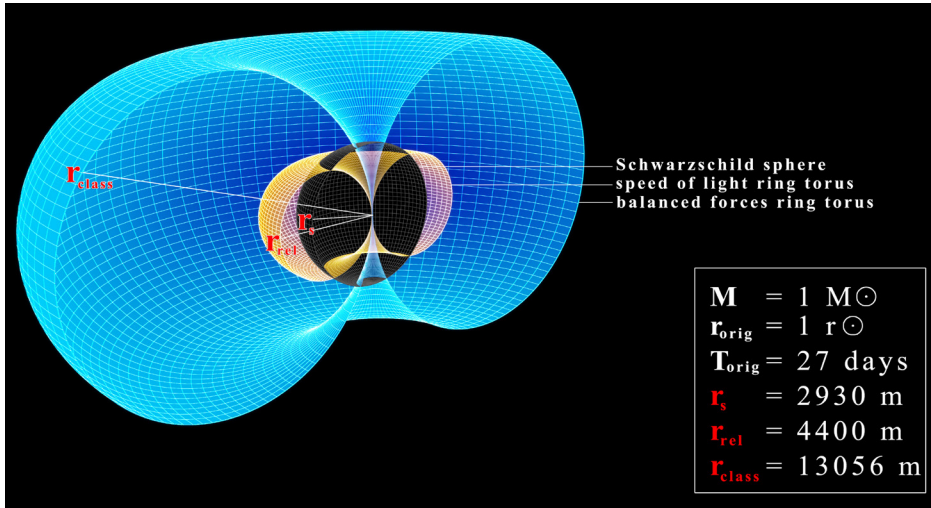
Fig. 13 | The illustration shows a collapsed star with the mass of the sun. The two contraction radii and the Schwarzschild radius depend on the mass of the sun, the original radius of the sun and the original mean rotation period of the sun.

The *balanced forces contraction boundary* of a collapsed star can indeed reduce, but how can that be possible? We already know that the ongoing collapse of a stellar remnant is finally put to an ultimate end by reaching the *balanced forces contraction boundary*. At this boundary, a further contraction is, without a doubt, not possible, because the *centrifugal force* at this boundary has exactly the same magnitude as the *gravitational force* of the star remnant. At this stage the collapsed star is extremely dense and indeed emits radiation, a so-called *synchrotron radiation*. Later on we will learn that the electrons of an extremely compressed collapsed star are not pressed into the protons as wrongly assumed but accumulate on the surface of the collapsed star. These electrons form an extremely dense, highly conductive electron plasma on the star´s surface. Due to the extremely high speed of rotation of the collapsed star the electron plasma

of the star generates a magnetic field. This magnetic field again has an retroactive influence on the electrons. The electrons of the electron plasma are subject to a decelerating and deflecting effect under the influence of the generated magnetic field. Due to this fact an *ultrahigh-energetic synchrotron radiation* is emitted. The generated *synchrotron radiation* is in principle a kind of „*deceleration radiation*". However, this radiation has to overcome the enormous gravitational potential of the collapsed star and is shifted to an extremely long wave range of the electromagnetic spectrum so that the collapsed star appears black in the visual range of the electromagnetic spectrum. (This radiation may not be confused with the impossible Hawking radiation, item17, appendix).The emitted radiation is energy which has, as we know thanks to Einstein, an equivalent mass. A loss of mass reduces the angular momentum. This leads to the speed of rotation of the star gradually slowing (in aeons of years), resulting in a reducing *balanced forces contraction boundary*. Following this logic, it would theoretically be possible for a star to continue shrinking (during aeons of years), however, it would be possible without ever being able to rotate with the speed of light. Just the *balanced forces contraction boundary decreases*. Thus, the shrinking star could, based solely on classical physics, even decrease in size to less than the Schwarzschild radius if only angular momentum is considered and if classical physics is applied strictly rather than relativistic physics. If one follows the previous classical logic, then the compression of a collapsing star could continue and would theoretically reach its ultimate limit upon reaching the *Planck density* (this density is just a theoretical value and does not exist in reality) which can never be exceeded. However, we will learn that it is not allowed to even reach the Schwarzschild radius; hence, to claim that the radius of a collapsing star can actually fall below the Schwarzschild radius is completely absurd. This was already indicated by the Schwarzschild solution as long ago as 1916. But for now we are sticking to the classical logic and the classical notion of „black holes". The *Planck density* is the theoretical ultimate compression limit but this extreme state of compression does not exist in reality. Why not? Well, the limit of the maximum compressibility should actually lie in the range of the density of nucleons (protons/neutrons). Their density has a value of about $2 \cdot 10^{17} \mathrm{kg/m^3}$. Written out:

200000000000000000 kg/m³

One might rightly ask why the density of nucleons represents a compression limit for collapsing stars. The answer is that we have absolutely no empirical evidence that there exists a density higher than the density of nucleons, i.e., atomic nuclei within our universe. A density higher than the density of atomic nuclei is based purely on speculation. There is actually no empirical evidence for it. Furthermore, we will find out throughout this book that the so-called *gravitational binding energy* of collapsed stars is much too low to allow a collapsing star to become as dense as the *Planck density*, of which more later. The maximum compressibility of a star is achieved in a state at which atomic nuclei are so tightly packed that their electrons accumulate on the surface of the highly compressed star. Finally, the star forms a kind of super atomic nucleus. If one considers that the diameter of an atomic nucleus is only 1/10000 to 1/100000 of the diameter of an atom than a tremendous compression potential is found here. The mass of an atomic nucleus accounts for more than 99.99 percent of the mass of an atom. So, the mass of the electrons is indeed negligible. **Considering, the atomic nuclei of the entire universe would be pressed tightly, then the entire mass of the universe could be compressed into a volume with a radius approximately equal the volume of a sphere with the orbital radius of Mars! This is unbelievable, is it not? However, we will learn that this would not have an influence on the spatial extent of the universe because of the equivalence of mass and space which will be discussed thoroughly in a later chapter of this book.** Thus, matter does indeed have an immense compression potential even without the propagation of a singularity. The universe is almost a perfect vacuum because its mass is spread over the entire volume of the universe.

Back to the considerations of collapsing stars. The electrons of the atoms of a collapsing star are finally separated from their nuclei, because the laws of quantum physics allow electrons to „orbit" an atomic nucleus exclusively on fixed orbitals with a very specific energy level (discrete orbitals). When atoms are compressing tightly, the atoms will be *ionized,* which means that the electrons are separated from their atomic nuclei. The electrons will not be pressed into the atomic nuclei and as a consequence, the „famous" *neutron stars (14)* cannot exist in the reality of our universe! The electrons of the ionized atomic nuclei move toward the surface of the collapsing star where they form an extremely dense

electron plasma. The electron plasma cannot be infinitely compressed. This prevents the so-called *degeneracy pressure* of the electron plasma. The more pressure is exerted on the electron plasma, the greater the *degeneracy pressure* becomes, counteracting the compressing force. This is a direct consequence of the *Pauli principle* which prohibits elementary particles from being located simultaneously at one point. What is true of the electrons also applies to protons and neutrons as well . The more one tries to compress elementary particles, the stronger the *degeneracy pressure* counteracts. Therefore, based solely on the *Pauli principle*, the collapse of a star cannot, under any circumstances, lead to a state of singularity. This is pure nonsense. The mentioned electron plasma forms the very thin but extremely dense periphery of the rotating collapsed star. Due to the extremely rapid rotation of the collapsed star, a gigantic magnetic field is induced by the *high-density electron plasma*. Attracted atoms from outside become ionized by the high-energy interaction of the attracted matter. The negatively charged electrons and the positively charged atomic nuclei are separated. These ionized, charged particles are focused poleward (towards the appropriate oppositely charged poles) by the strong magnetic field of the collapsed star and are shot into space due to correlative electrostatic repulsion while forming high-energy matter jets. Stars of this type are also called *pulsars (14)*. Extremely massive collapsed stars form so-called *magnetars* which are characterized by a very strong magnetic field. Adequate solutions for the existence of magnetars have not yet been formulated. However, through our considerations of collapsing stars, the existence of magnetars can be explained.

At this point, it is now necessary to address the aforementioned *relativistic effects* associated with „black holes". We have to leave the collapsing, rotating star and look at the whole procedure from the standpoint of an observer, meaning we have to change the frame of reference.

COLLAPSING STARS AND RELATIVISTIC EFFECTS

So far , we have derived two parameters associated with collapsing stars in this book. By way of reminder, we show the parameters again here:

$$\frac{L_0}{M_0 c} \qquad \frac{L_0^2}{G M_0^3}$$

Kerr-Parameter   *balanced forces parameter*

We already know, that the resultant boundaries of these parameters are the *classical speed of light contraction boundary* and the *balanced forces contraction boundary*. These boundaries are, solely from the standpoint of classical physics, entirely correct. However, what we have not yet considered are the so-called *relativistic effects* that occur if an external observer views the classically described processes from a distance. Why is this necessary? The theory of relativity owes its name due to the simple fact that you have to interpret all physical processes depending on whether you are inside or outside the observed reference frame and whether you are stationary or not, relative to the observed reference frame. This is called *relativity*. We know that the speed of light is never exceedable. So, if we imagine that we could travel on a spaceship through the universe with a cruising speed of 90% of the speed of light and furthermore imagine we would fire a bullet with our space ship canon into the direction of flight, which would be able to leave the muzzle of the canon likewise at 90% of the speed of light, then, intuitively , the speed of the spaceship and the speed of the fired projectile added together should equal 180% of the speed of light, so that the result would be a „superluminal speed" of the projectile. However, this does not happen because space, time and mass subordinate to the unchanging universal constant , the speed of light, so that the speed of light can never be exceeded. *The speed of light is the measure of all things*. Space is mathematically formed by three line segments (length, breadth, height). The line segment in direction of flight seems to shrink relative to an observer at rest when the spaceship is approaching the speed of light.

This happens according to the following equation:

$$l = l_0 \sqrt{1 - \frac{v^2}{c^2}}$$

„l_0"stands for the relativistically uninfluenced length and „l" stands for the relativistically influenced length.

The situation is similar to that of the mass of an object approaching the speed of light. The mass of an accelerating object will actually increase according to the following equation:

$$M = \frac{M_0}{\sqrt{1 - \frac{v^2}{c^2}}}$$

„M" stands for the relativistically influenced mass and „M_0" for the relativistically uninfluenced mass .

Even time is influenced by the speed according to the following equation:

$$T = \frac{T_0}{\sqrt{1 - \frac{v^2}{c^2}}}$$

„T_0" stands for the relativistically uninfluenced time and „T" for the relativistically influenced time.

The described phenomenon occurs even at low speeds, as we know from our everyday life. In our everyday life, the term „v" (velocity) in the above equations is just a miniscule fraction of the speed of light, so that the value of the term „v^2/c^2" is almost zero, and the term „ $\sqrt{1 - \frac{v^2}{c^2}}$" is

approximately „1". This means, that the influence of relativistic effects in our everyday life is mostly negligible. We simple do not notice any change of space, time and mass in our everyday life, although, there is actually an extremely small change. Thus, we can normally add speeds in our everyday life, without any observable or measurable effect on space, time and mass. Relativistic effects are not noticeable to us because we do not move fast enough. However, the effects are still there, they are just so negligible in our daily lives that we completely overlook them. This is quite different when approaching the speed of light; the closer we get to the speed of light, the more noticeable the effects are in regard to space, time and mass. Thus, the faster you are, the less relativistiv effects are negligible. This must also be taken into account with the equations we already derived. For an observer at rest relative to the observed moving system or relative to the observed rotating system, the equations must still be valid for all relative velocities.

As a consequence of this fact, we have to change the *classical speed of light contraction boundary equation* and the *classical balanced forces contraction boundary equation* in the following way:

relativistic speed of light contraction boundary equation

$$r = \frac{L}{Mc} \cdot \sqrt{1 - \frac{v^2}{c^2}}$$

relativistic balanced forces contraction boundary equation

$$r = \frac{L^2}{GM^3} \cdot \sqrt{1 - \frac{v^2}{c^2}}$$

The first equation defines the *relativistic speed of light contraction boundary* and the second equation defines the *relativistic balanced forces contraction boundary*. We are only interested in the equation containing the *Kerr parameter „L/Mc"*. We already discovered that the *Kerr parameter* can only be derived, if the

speed of rotation of a rotating object equates to the speed of light „c".

$$r = \frac{L}{Mc} \cdot \sqrt{1 - \frac{v^2}{c^2}}$$

Thus, if we consequently substitute v with c (speed of light) in the *relativistic speed of light contraction boundary equation* above, then it is evident that the equation becomes zero.

$$r = \frac{L}{Mc} \cdot \sqrt{1 - \frac{c^2}{c^2}} = 0$$

If we suppose that an rotating object could rotate at the speed of light „c", then we could observe a very strange effect (however, this is not allowed in reality!). To the stationary observer it would appear that an object, rotating at the speed of light „c", disappeared right before his eyes, shrinking to an infinitesimal point. In accordance with Einstein´s laws, the collapsed star would assume an infinitely large mass. This can be expressed by this equation:

$$M = \frac{M_0}{\sqrt{1 - \frac{v^2}{c^2}}} = "\infty" \text{ , if } v \to c$$

„M_0" refers to the mass of a non-rotating star and „M" refers to the mass of a star with a rotational speed corresponding to the speed of light. „∞" means infinitely large, thus, the mass would be infinitely large.

Furthermore, time would stand still. Thus, the collapsed star would have shrunken to an infinitely small point, an infinitesimal point, i.e. a singularity, without any extent but with an infinitely large mass, an infinitely large gravitational potential and time would be „frozen". The star would form a so-called *point-singularity* with an infinitely large

gravity. **Thank God, there is no such singularity in our universe**. If there were just one such singularity in our universe, it would spell the immediate end of our universe. Why? According to Einstein`s laws, a collapsed rotating star shrunken to an infinitesimal point would acquire an infinitely large mass and, thus, logically obtain an infinitely large gravitational force. Thus, the entire universe would be instantly sucked into the singularity and the universe would cease to exist. **This is precisely why the *Kerr metric* is an absolute absurdity.** The *Kerr metric* assumes tacitly that the collapsed star remnant rotates with the speed of light which is impossible due to the *balanced forces contraction boundary* (this boundary can never become zero because this boundary prevents the speed of rotation „*v*" *from* becoming the speed of light „*c*")*. The *balanced forces contraction boundary* prevents a collapsing star from reaching the *speed of light contraction boundary*. As a result any further contraction is stopped due to the centrifugal force. Thus, the law of conservation of angular momentum prevents a *point-singularity*. The famous British astronomer, Sir Arthur Eddington, tried to explain this fact to Chandrasekhar but Chandrasekhar preferred to ignore Eddington's advice. Nevertheless, Chandrasekhar was awarded a Nobel Prize for his incorrect calculations. Consequently, his Nobel Prize is not worth a dime.

Mother nature prevents a singularity from appearing in our universe by means of the *centrifugal force*. However, even if, hypothetically speaking, a mass does not rotate, it still cannot shrink to a point singularity. This matter will be discussed in more detail in the course of this book. Simply speaking, there is no singularity in our universe. The singularity is pure esoteric nonsense because a singulatity assumes infinities. However, infinities are not possible in our universe due to quantum physical reasons, i.e. *Planck units*. The *Planck units* prevent infinities, thus, singularities, because they set the limits in the *quantum physical world*, similary to the limit of the *relativistic world*, the speed of light „*c*".

THE SINGULARITY AND THE SOLUTION OF HAWKING'S PARADOX

At the beginning of the year 2014, *Stephen Hawking* announced, that the idea of „black holes" is probably wrong and that we should doubt whether „black holes" actually exist in our universe. This was a very honourable attempt to bring science back on a sound basis. In the calm world of cosmology this statement, however, was an unmistakable bang and was perceived by many astrophysicists as blasphemy. In the past, Stephen Hawking had already expressed strong doubts about the existence of „black holes". However, his doubts were not accepted. If the results of the *Schwarzschild solution* and *quantum physical aspects* are taken into account, the only logical consequence is, that a singularity simply cannot occur in our universe! Unfortunately, the Schwarzschild solution does not fit in with the concepts of so-called „modern" cosmologists which circumvent and invalidate physical laws, thus, allowing more esotericism in the field of cosmology.

The answer to the question, „*What are black holes?*" is found in Karl Schwarzschild's solution based on Einstein's equations. Mathematically, the Schwarzschild solution represents the solution for some important issues in relation to the cosmos and so-called „black holes". The only problem is the consistent transfer of the results of the equation shown below into our comprehension and the overcoming of the leaden inertia of the astrophysical science apparatus. Please, do not be alarmed if we now show you this mathematical heavyweight that is referred to as the *Schwarzschild solution of Einstein's equations*:

$$ds^2 = g_{\mu\nu}dx^\mu dx^\nu = -c^2\left(1 - \frac{2GM}{c^2 r}\right)dt^2 + \frac{1}{1 - \frac{2GM}{c^2 r}}dr^2 + r^2 d\theta + r^2 sin^2\theta d\phi^2$$

To most readers this equation is incomprehensible. However, the statement of this equation is, in fact, quite easy to understand if it is depicted graphically (Fig. 14).
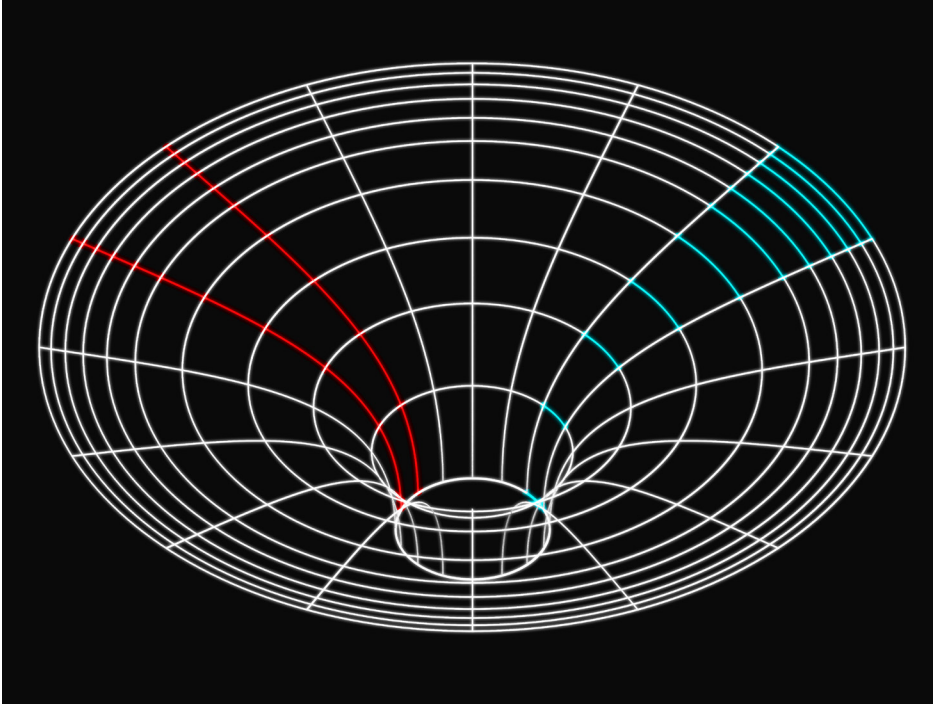
Fig. 14 | Graphic depiction of the Schwarzschild solution.

The illustration shown above displays a surface, which forms a „funnel".
This "funnel" represents in a two-dimensional way the distorted
spacetime in the vicinity of the Schwarzschild radius of a to its utmost
collapsed mass. The wide end of the „funnel" could, in principle, extend
to infinity, since one could, in principle, substitute infinitely large values
for „r" in the Schwarzschild solution. However, later on we will see,
that their exists a maximum value for „r". For now, we go on with our
purely theoretical considerations. One can imagine the Schwarzschild
solution as an infinitely large and flat surface in which there is a sink that
is represented by the „funnel", formed by an extremely compact mass.
This „funnel" is a two-dimensional illustration of the three-dimensional
space of the universe.

Considering the circular lines (blue lines) of the „funnel", then it is
evident that the distances between these lines increase the closer they
get to the Schwarzschild radius „r_s". This increase in distance of the

circular lines (blue lines) of the „funnel" is a pictorial illustration of the distortion of space with increasing approximation to the Schwarzschild radius. Contrary to our idea of a „funnel", the „funnel" shown here does not lead into a hole, in order to allow something to flow out and, thus, to leave the universe. The „funnel shape" is obtained only by the two-dimensional graphical illustration of a mathematical equation (Schwarzschild solution) that describes a three-dimensional space. You may not misinterpret this „funnel" as a drain option. The „funnel-shaped" illustration shows only that the space in the immediate vicinity of the Schwarzschild radius is extremely distorted. You can see that the narrow part of the „funnel" seems to come to an abrupt end (**Fig.14**). If we wanted to illustrate the „funnel" according to the statement of the Schwarzschild solution correctly, the narrow „funnel tube" would continue to infinity without decreasing below the Schwarzschild radius or ever reaching it (asymptotical approximation). See Fig. 15.

The „diameter" of the narrow end of the „funnel" is defined by the Schwarzschild radius „r_s" of the respective collapsed mass. Thus, the Schwarzschild radius „r_s" defines the size of the small end of the „funnel", below which the radius cannot fall; the „tube" of the „funnel" theoretically extends to infinity. In our illustration this infinity would be represented as an infinitely continued „tube" of the „funnel" that never gets smaller. However, in reality, no infinitesimal approach to the Schwarzschild radius is possible. The distance closest to the Schwarzschild radius is the Planck length „l_p". See Fig. 16
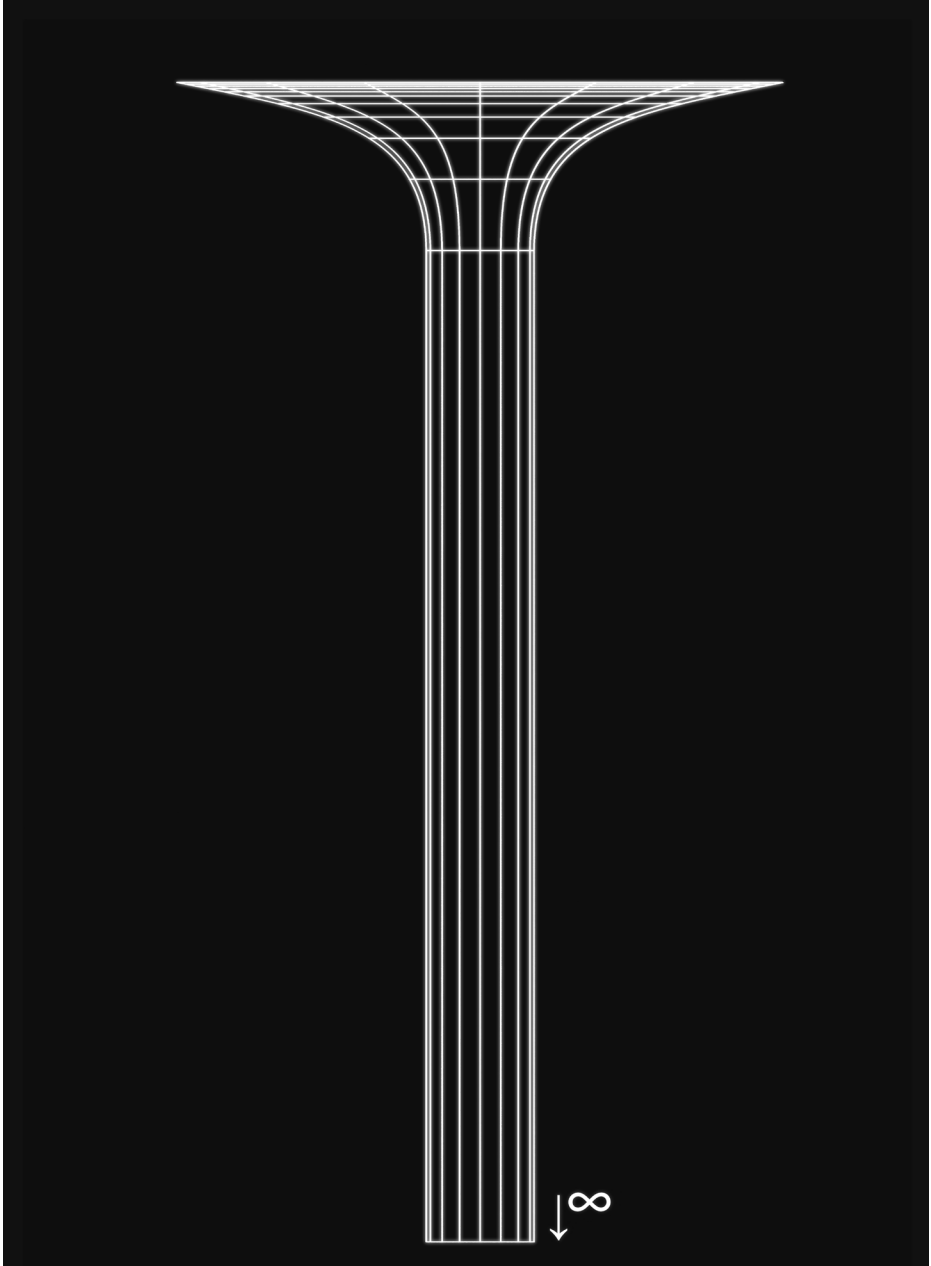
Fig. 15 | Illustration of an unlimited „funnel" according to the Schwarzschild solution without considering the limiting Planck length.

A further approximation is not possible because, according to the findings of Max Planck, no smaller distances truly exist. Here is the actually reached end of the „funnel tube". The domain of the Schwarzschild solution is: „$r \geq r_s + l_p$". A closer approximation to the Schwarzschild radius is, without doubt, impossible and prevents an infinity.

If we consider the longitudinal lines (red lines fig. 14) in the „funnel-illustration", we can see that the distances between the lines decrease the closer they come to the Schwarzschild radius „r_s", however, this convergence seems to end in close proximity to the Schwarzschild radius. The longitudinal lines (red lines) appear to be nearly parallel in the area of the „funnel tube", while the circular lines (blue lines) increase their separation, as described. The basis for this is the following: The circular lines describe the increasing distortion of space with increasing approximation to the Schwarzschild radius. The longitudinal lines define the observed size of the object mistakenly called a „black hole". Actually, the longitudinal lines define the observed size of a kind of *black sphere* (which is a lack of space and time) in our universe which has a specific extension, defined by the Schwarzschild radius. The *black sphere* of a defined mass has a clearly defined extent. Therefore, the longitudinal lines (red lines) of the two-dimensional representation of space appear parallel in the vicinity of the Schwarzschild radius. The increasing distance between the circular lines (blue lines) - the distortion of space - with approximation to the Schwarzschild radius, can become infinitely large in principle, which means that the spatial dimension „height" can continue decreasing to infinity, however, the approach to infinity theoretically „stops" at the latest when the *Planck length* is reached. We will learn that in reality a shrinking of the spatial dimension stops much earlier. The illustration below depicts the space distortion with asymptotical approximation to the Schwarzschild radius. It is a cross sectional depiction of the „funnel".
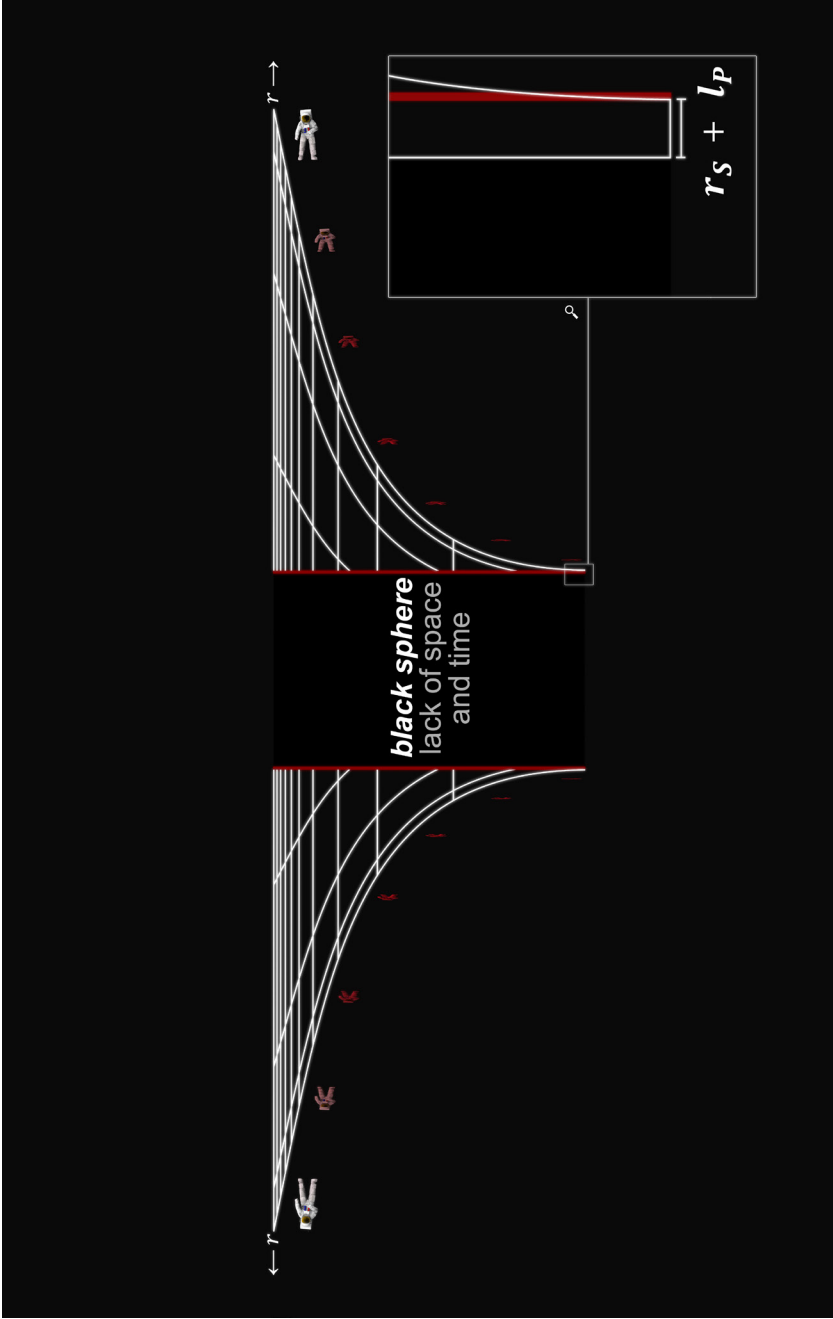
Fig. 16 | Depiction of space distortion using the example of two astronauts approaching the Schwarzschild radius of a collapsed star. The mass of the star is located in front of the Schwarzschild radius, which is an unexceedable asymptote. „Beyond" the Schwarzschild radius is neither mass nor space nor time.

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For a better understanding of what the Schwarzschild solution represents, two astronauts are depicted in the illustration above (**Fig.16**). One can easily see that the astronauts become more distorted the more they are approaching the Schwarzschild radius. Finally, the astronauts appear to be almost flattened. Thus, the Schwarzschild solution is nothing other than a mathematical description of the increasing space warp with increasing approximation towards the Schwarzschild radius. As can be seen, the third dimension - the spatial dimension „height" – gets smaller and smaller and, hence, the astronauts appear more and more flattened the closer they come to the Schwarzschild radius (the astronauts themselves do not notice any change). However, an observed astronaut can never become so flat, that he would disappear (height = 0). An approximation towards the Schwarzschild radius does not stop at the Schwarzschild radius itself but at the Schwarzschild radius plus the *Planck length*. **Mass, space and time are located at the „edge" of a** *black sphere*. **The** *black sphere* **defines a region in the universe where space is displaced, meaning that the** *black sphere* **represents a lack of space within our universe. You may not confuse a** *black sphere* **with a „black hole.** A *black sphere* is comparable to an air bubble in the water which is nothing else than a lack of water. The water is displaced by air. In the same manner, the *black sphere* is a displacement of space, time and mass that appears to us as a kind of bubble within our universe. There is no hole or a „black hole", merely an unexceedable border, the Schwarzschild radius.
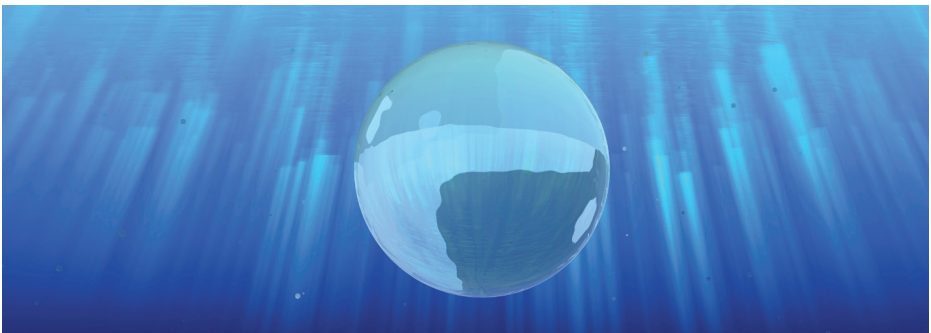
Fig. 17 | An air bubble within water is just a lack of water. Similar to this a *black sphere* is a lack of space, time and mass within the universe.

The next illustration shows an example of such a globular gap within the

space-time structure. The collapsed mass of the star forms the shell of the *black sphere. This shell* represents an insurmountable boundary of our universe (inner boundary of the universe). In the illustration below (Fig. 18) you can see that an extremely compressed mass gradually displaces the space-time structure and finally forms a *black sphere*. An „inside" to this *black sphere* does not exist. Thus, nothing can fall „into a *black sphere* and subsequently disappear, because „there" is nothing at all, not even a vacuum. (A detailed depiction of the following illustration is to be found in the appendix, item 20)
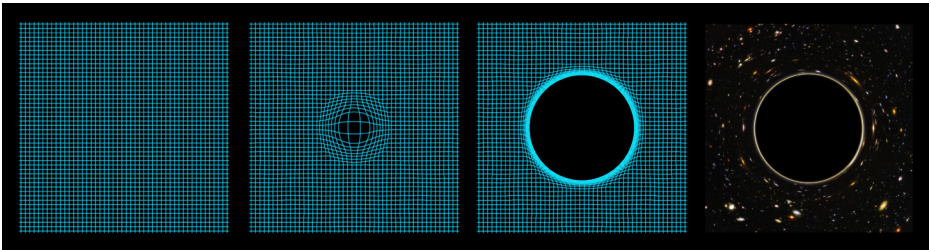
Fig. 18 | Illustration of the displacement of the space-time structure by an extremely compressed mass. Mass, space and time are located at the edge of a black sphere. A black sphere defines a lack of mass, space and time.
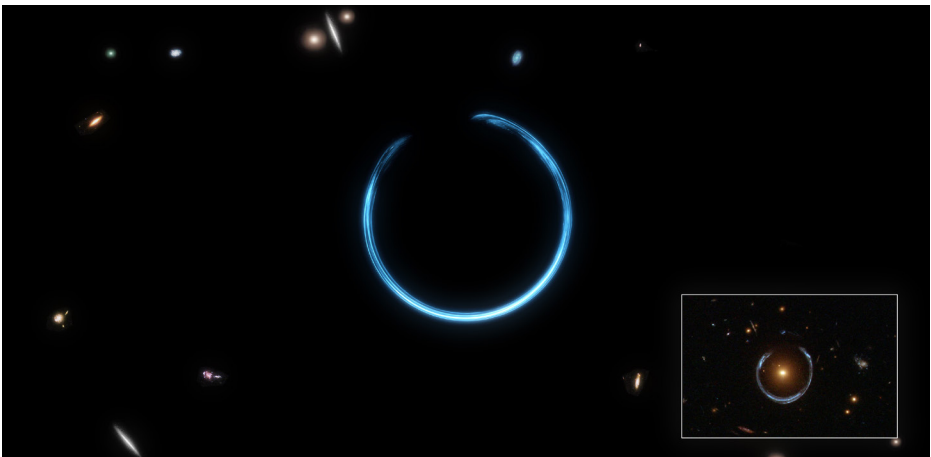
Fig. 19 | Computer designed black sphere based on an original photo of the so-called „cosmic horseshoe" taken by the Hubble Telescope.

Let us come back to the previous „funnel" illustration with the two astronauts again (Fig.16). Principally, the universe has an **inner boundary defined by**

the edge of each *black sphere* **and an outer boundary defined by the extent of the universe**. There is actually an outer boundary of the universe, which means that a maximum value for „*r*" can be plugged into the Schwarzschild solution. The wide end (outer edge) of the „funnel" represents the limited extension of the universe. In the course of the book, we will indeed derive this limit empirically by means of the *Pioneer-anomaly*. In spite of the fact that our universe has a clearly defined extent, we can never find an end to the universe. Just imagine our earth, which has a clearly defined radius and, thus, a clearly defined surface. However, we can move endlessly on the surface of the earth without ever reaching an end, an edge or a wall. **In summary: Our universe has a definite extension, depending on the mass of the universe, thus, it has an** *outer boundary*. **Each** *black sphere* **within the universe represents an** *inner boundary* **of the universe. Both boundaries are not exceedable.** *Black spheres* **define a lack of space, time and mass within the spacetime structure of our universe.**

According to most of the „modern" cosmologists, the Schwarzschild radius defines the so called „event horizon" of a „black hole". It is assumed that the Schwarzschild radius could be reached by a collapsing star and that it could even shrink below its Schwarzschild radius. But more than that, it is assumed that a collapsing star could endlessly shrink and finally disappear in a so-called "point-singularity". No event „beyond" the „event horizon" would be accessible to us and be hidden forever. Hence , the term „event horizon". This interpretation is not only incorrect but simplistic and represents a lack of knowledge or the conscious fraudulent attempt of some alleged „modern cosmologists" to mystify cosmology. However, we now know the true nature of *black spheres*, mistakenly called „black holes". *Black spheres* are actually a gap in the spacetime structure of our universe. This is also the solution of Hawking's problem which will be explained in the following. Even now, the consensus is, that „black holes" and the „event horizon" actually exist, but these terms are misleading and lead to completely wrong conclusions. Once again, the term „event horizon" suggests, that things can exceed this „event horizon" and, thus, would be able to leave the universe. Hawking's problem lies precisely in this incorrect reasoning. After passing the „event horizon" the universe would lose the information about that which had passed the „event horizon". However, the *closed system* universe may not lose any information; this is physically not allowed.

event horizon

singularity
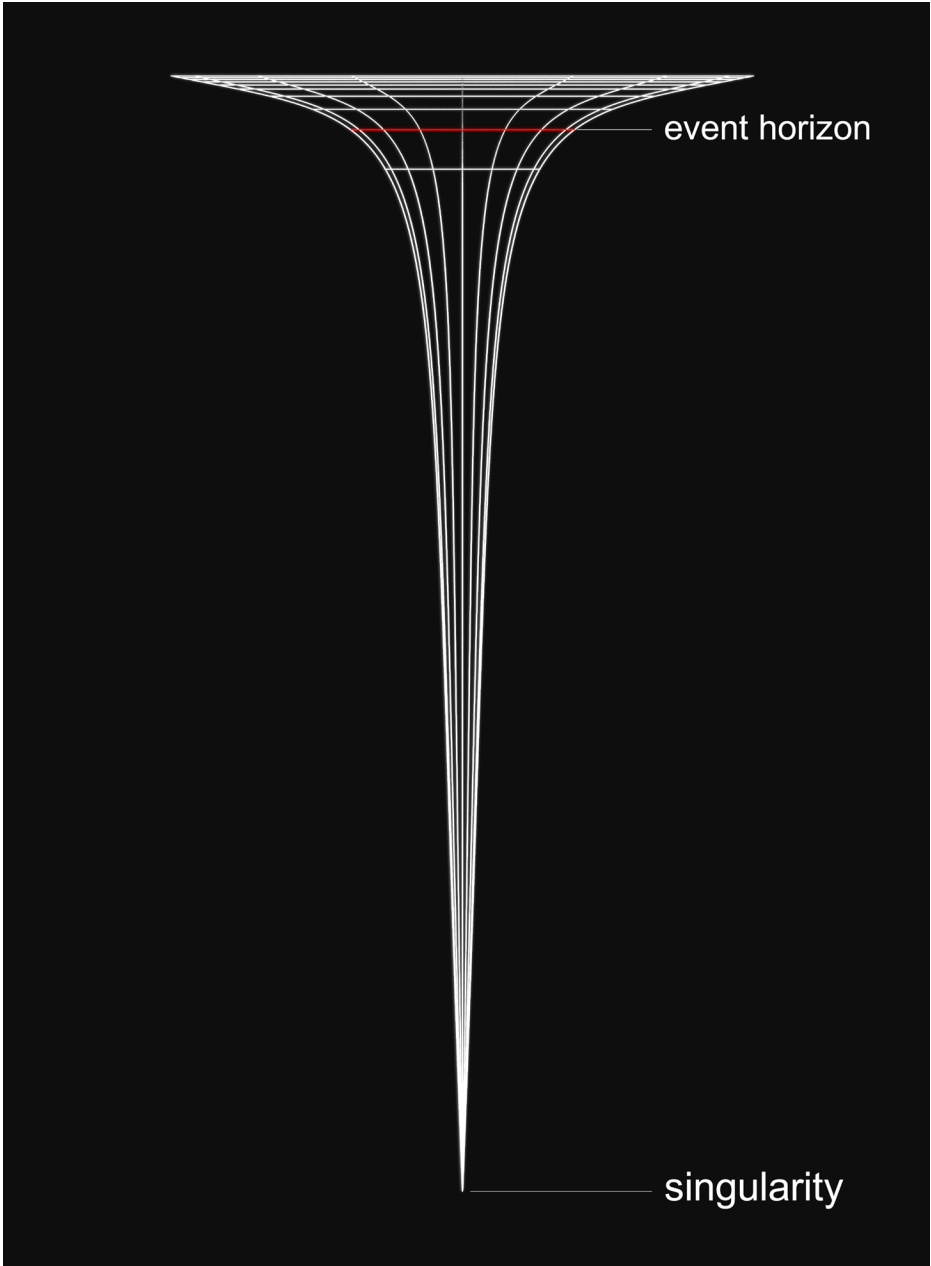
Fig. 20 | Wrong assumption of a „black hole". According to this assumption , it is possible to exceed the „event horizon".

The „event horizon" is not a limit that can be exceeded, but an asymptote, that can be approached by the mass of a collapsing star or any other objects. While approaching this asymptote, the third spatial dimension (height) approaches the value zero, but can never actually reach the value zero. This is prevented by the planck units. The Schwarzschild radius can never be passed nor be reached. With increasing approximation to the described asymptote, the dimension „height" is more and more „squeezed" from the viewpoint of an outside observer. The space seems to become increasingly flat until one gets the impression that the three dimensional space (length, breadth, height) appears compressed, forming a two dimensional (length, width) surface. We can imagine this like a globe.

In the same way as a spaceship – relative to an outside observer - seems to increasingly shrink in the direction of flight when approaching the speed of light, the space distortion increases when approaching the Schwarzschild radius.
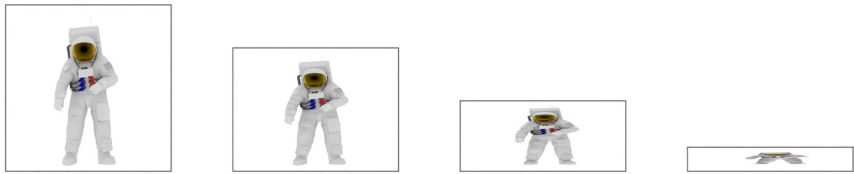
Fig. 21 | Example of a relativistic space distortion caused be speed or by a super-massive object.

The misleading term „event horizon" should no longer be used. We will use the term *Schwarzschild limit*, or *Schwarzschild asymptote*. Absolutely nothing can ever exceed this asymptote. There is no „event horizon" beyond which something can escape from the universe. The *Schwarzschild asymptote* appears to an outside observer as a sphere or as a kind of bubble in the universe that represents the border between the space-time structure of our universe and the gap in the spacetime structure, which is formed by the *black sphere*. To an outside observer, everything that approaches the Schwarzschild radius appears to be increasingly distorted the closer it comes to the *Schwarzschild asymptote* and the more the impression arises that space and everything within this space is distorted to finally form a kind of globular spherical surface,

thus, the third dimension (height) seems almost to be reduced to zero. However, it is not possible that the third dimension (height) actually becomes zero, for the same reason that the speed of light can never be reached but only be approached asymptotically. Exceeding the speed of light is as impossible as it is to exceed the *Schwarzschild asymptote*. Hence, the surrounding three dimensional space of a *black sphere* seems to be reduced to a two dimensional surface. The characteristics of a *black sphere* have absolutely nothing in common with the characteristics of a so-called „black hole". The interpretation of so-called „black holes" defies the laws of physics. We can easily prove this with the help of the *Schwarzschild radius equation*:

$$r_s = 2GM/c^2$$

It is said, that it should be possible, that a star is able to shrink under its corresponding Schwarzschild radius „r_s". However, if we suppose a clearly defined mass and wish to get a result of „$r < r_s$", than it is necessary to substitute „c" (300000 km/sec) with a value larger than the speed of light („c" > *300000 km/sec*)! **Thus, to postulate an exceedable „event horizon" means to break fundamental laws of physics. Dear cosmologists, don´t you feel ashamed?**

On the following page you will find an illustration of two astronauts approaching a *black sphere*.

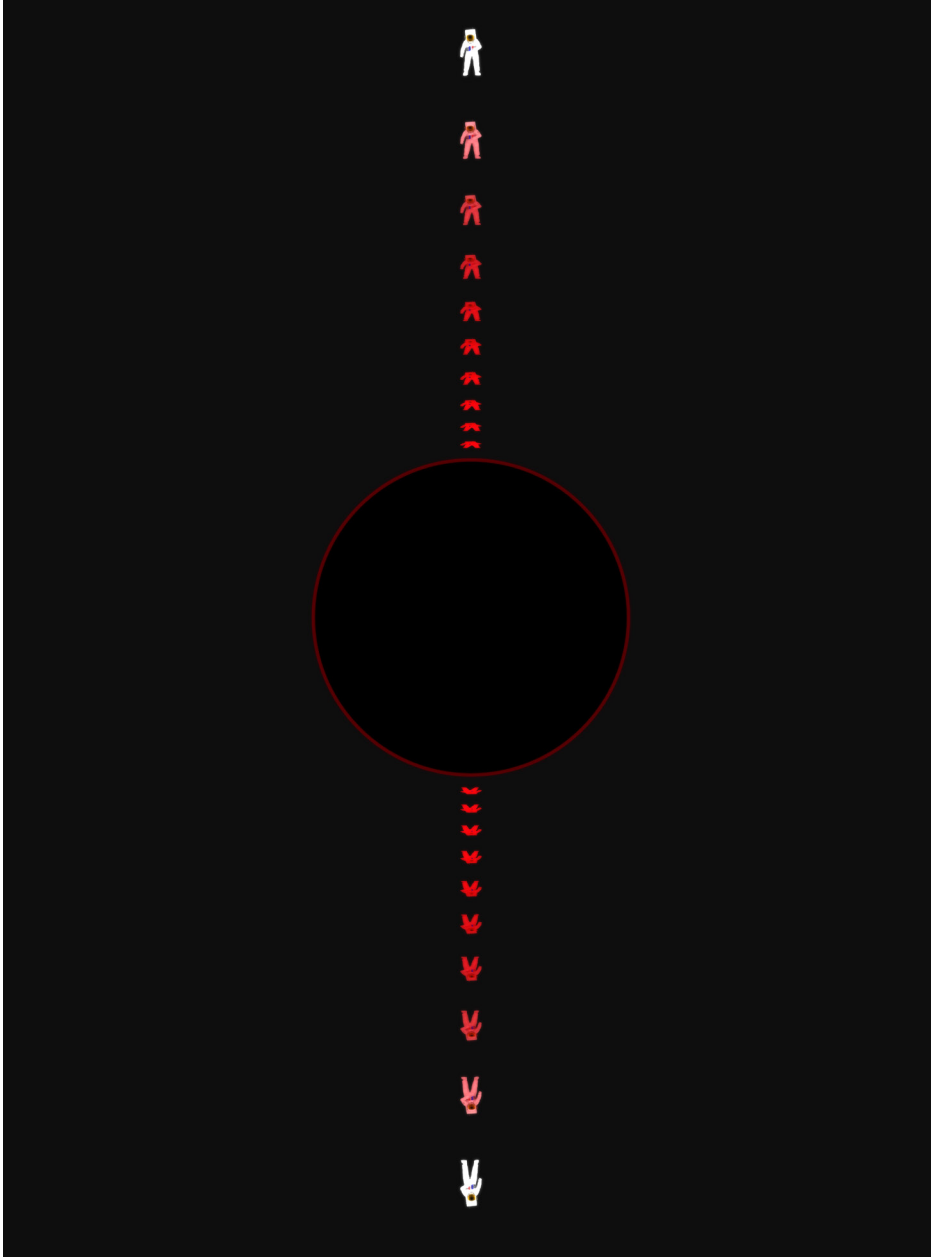Fig.22 | While two astronauts are approaching a *black sphere,* they appear increasingly flattend. However, the astronauts themself do not notice any change.

The flattened and globular shaped „spatial surface" includes the total mass of the collapsed star (Fig. 22). This means that the space and the mass of the collapsed star are not „inside" the *black sphere* but located around the black sphere because nothing can be located „inside" this gap in the spacetime structure. An observer located on the collapsed star itself would perceive space and time as unchanged. This is similar to a spaceship that is approaching the speed of light, the crew of the spacecraft does not notice any change in space and time inside the spacecraft as well. The same principle is applicable to a spaceship which is attracted by a black sphere. The crew would not notice any change in space and time. The term „black hole", which allows an „inside" and an exceedable „event horizon" is misleading and we should replace it by the term **black sphere**. The term „hole" implies that something can fall *into* it and subsequently disappear, or, as seriously postulated, fall into another universe. Such postulations are pure science fiction and have nothing in commom with sound physics.

How can we combine the idea of a relativistic *black sphere* with the classical Schwarzschild radius when the mass of a collapsing star approaches the Schwarzschild radius? How does a *black sphere* look like from the position of an external observer? Is the Schwarzschild radius in this case not, by definition, half the diameter of an observed *black sphere*? No, actually the observed diameter of a *black sphere* is not double the Schwarzschild radius. As we know, in the classical sense, the Schwarzschild radius defines half the diameter of an impacted mass that does not allow light from escaping. But this interpretation is based solely on *classical physics* and not on *relativistic physics*. This means that the observed phenomenon *black sphere* cannot be defined in a simple classical way. We learned that space and mass of a collapsed star form an extremely distorted flattened globular and almost two-dimensional surface which defines the observable *black sphere*. The mass of the collapsed star is located <u>around</u> the *black sphere*. Thus, **double the Schwarzschild radius (the classical diameter of a collapsed star) is half the perimeter of a *black sphere***. It is very important to understand this fact. Due to the fact that double the Schwarzschild radius is half the perimeter of a *black sphere*, we can calculate the diameter of the *black sphere* phenomenon as it is observable for an outside observer based on the following equation:

$$d_{BS} = \frac{4r_S}{\pi} = 1.273 \ldots r_S$$

„d_{BS}" stands for the diameter of a black sphere.

Thus, the observable diameter of a *black sphere* „d_{BS}", does not correspond to twice the Schwarzschild radius but only to about 1.27 times the classical Schwarzschild radius! How can this be conceived? For a better understanding, consider our earth, which is nothing other than a globular mass floating in space. If you are located at a specific point on the Earth, then the shortest distance to your opposite position on the Earth is the diameter of the Earth. So, if you want to take a short cut to your opposite position on Earth, then you would have to dig a perpendicular tunnel through the centre of the earth in order to eventually reach the diametrically opposite position of your original position on earth. This looks completely different in regard to *black spheres*. The shortest distance from one position on a *black sphere* to the opposite position is the diameter, but the diameter of a „black hole" is half the perimeter of a *black sphere*, this is because there is no space „inside" a *black sphere* but a lack of space. Space is located <u>around</u> a black sphere. A short cut „through" the *black sphere* is impossible because „there" does not exist an „inside". Here is a graphical example.
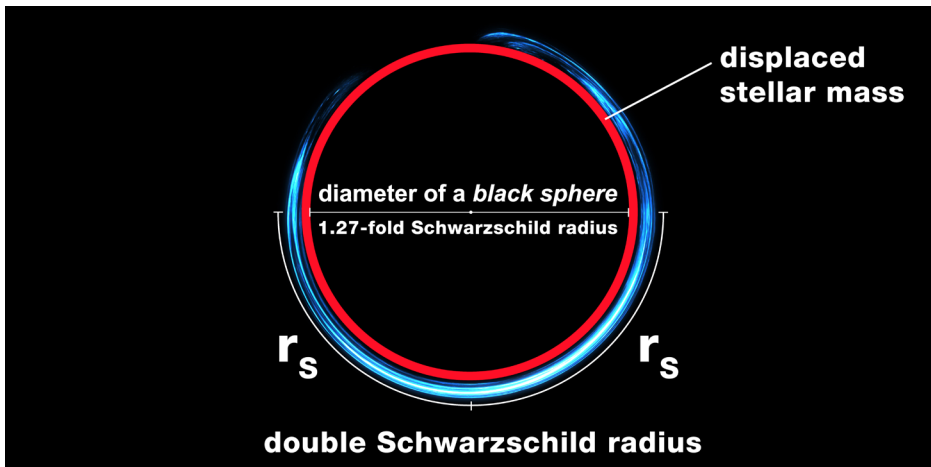

displaced stellar mass

diameter of a *black sphere*
1.27-fold Schwarzschild radius

r_S

r_S

double Schwarzschild radius

The diameter of an observed *black sphere* is about 1.27 times the classical Schwarzschild radius. Double the classical Schwarzschild radius is half the perimeter of an observed *black sphere*. Based on this insight we can forge a bridge to the observed background radiation. No doubt, you will be staggered by this statement, however, a thorough consideration of background radiation follows shortly; for now, you should internalize the explained facts. The collapse of a mass below its defined Schwarzschild radius is fundamentally impossible. This cannot and does not happen in our universe. Such a misleading interpretation is based solely on classical physics. The Schwarzschild solution explains how a *black sphere* works. To believe in the original misinterpretation of „black holes" is like believing that the speed of light can be exceeded. You are free to believe this, but such a belief does not comply with the reality of our universe. From the classical point of view it is possible that a collapsing stellar remnant is able to shrink below its Schwarzschild radius, but from the relativistic point of view it is absolutely impossible to attain even the Schwarzschild radius. Imagine you are a crew member on a spaceship that moves approximately with the speed of light. Furthermore, imagine you illuminate a wall in direction of flight using a torch. Based on classical physics it is permitted to add the speed of the spacecraft to the speed of the photons leaving the torch in the direction of flight. The result, in the classical sense, would be a superluminal speed of the photons. But according to Einstein's theory of relativity, this is simply not allowed. However, a crew member would not perceive that the light of the torch is moving in slow motion or even that the light stands still due to the fact that it is not allowed to exceed the speed of light. Based on the perspective of a crew member, the whole process is entirely normal. However, based on the perspective of a stationary, outside observer, the described process would actually proceed in slow motion. The light photons of the torch would indeed move in slow motion towards the wall in direction of flight if the spacecraft could cruise extremely close to the speed of light. It would indeed seem as if time almost stood still. This fact prevents the contradiction of Einstein's laws. Despite the very well-known relativistic effects, cosmologists continue to keep the preposterous idea of „black holes" alive, although this idea contradicts Einstein's relativistic laws.

Why do the keyholders of cosmological research not simply describe the phenomena of the universe in accordance with the laws of physics, rather than constantly overturn these laws in order to knit together a universe entirely according to their own liking or their fundamental esoteric or religious conviction? This is stupid, embarrassing, ignorant and completely unscientific. With the benefit of historical retrospect, this non-scientific approach will certainly be revealed as an attempt at deception just like the fabricated gravitational waves of a Big Bang that never happened. However, we know that „black holes" definitely cannot exist but that *black spheres* (gap in the spacetime structure of the universe) definitely do. *Black spheres* indeed solve Hawking's problem and the most amazing fact is, that *black spheres* were already described as long ago as 1916 by the German physicist Karl Schwarzschild, thus, one hundred years ago. It is a shame that Schwarzschild died in a stupid war that was born out of the arrogance and ignorance of a handful of idiotic esoteric rulers. Schwarzschild would never have permitted the misuse of cosmology to „knit together" a mystical „black hole" concept. However, arrogance and ignorance are not only a perfect basis for stupid wars but also for stupid theories. Let us return back to the topic. The mass of a collapsed star is always located in the extremely distorted, flattened space in the periphery of a *black sphere*. This means that a collapsed star can never disappear or even get lost. The mass of a collapsed star will never overcome the globular boundary we call the *Schwarzschild asymptote*, rather the mass of a star forms a distorted flattened „shell", located in the periphery of the *black sphere*, generated by the collapsed mass of the star. Half the perimeter of the theoretical smallest possible *black sphere* (micro *black sphere*, MBS) is the Planck length and this theoretically smallest possible *black sphere* has, from the viewpoint of an observer, a diameter of about 1.27 times the Planck length. Such a theoretical *black sphere* would generate the theoretically maximum distortion of space in our universe. The third dimension (height), however, would never become zero. Why not? **If a mass could shrink to exactly its corresponding Schwarzschild radius $r_s=2GM/c^2$, the mass would stretch an electromagnetic wave so much, that the wave would become a flat line, thus, the energy of the electromagnetic wave would be lost, it would disappear. This is absolutely impossible, because the universe is a closed system from which nothing can escape. On the basis of the general theory**

of relativity, an electromagnetic wave can indeed be stretched due to the gravitational potential of a mass, but it can never become a flat line. This is prevented by the theoretically smallest length, the Planck length. Ironically, the smallest theoretically possible *black sphere* has the strongest theoretically possible gravitational potential in our universe. It would be able to extend an electromagnetic wave to its maximum but is never able to extend an electromagnetic wave so much that it becomes a flat line. The smallest wavelength in the universe (Planck wavelength) can be extended to a wavelength of the diameter of the universe! Thus, the theoretically longest wavelength in our universe is defined by the term c^2/g_u which is the diameter of the universe ("g_u" stands for the gravitational potential of the universe which is the value of the Pioneer anomaly). The shortest wavelength is defined by the term $\sqrt{(\hbar G/c^3)}$ ($\hbar$ means the reduced Planck constant $h/2\pi$). Here a photo of a real *black sphere* taken by the Hubble telescope. As you can see, *black spheres* are not fictional.
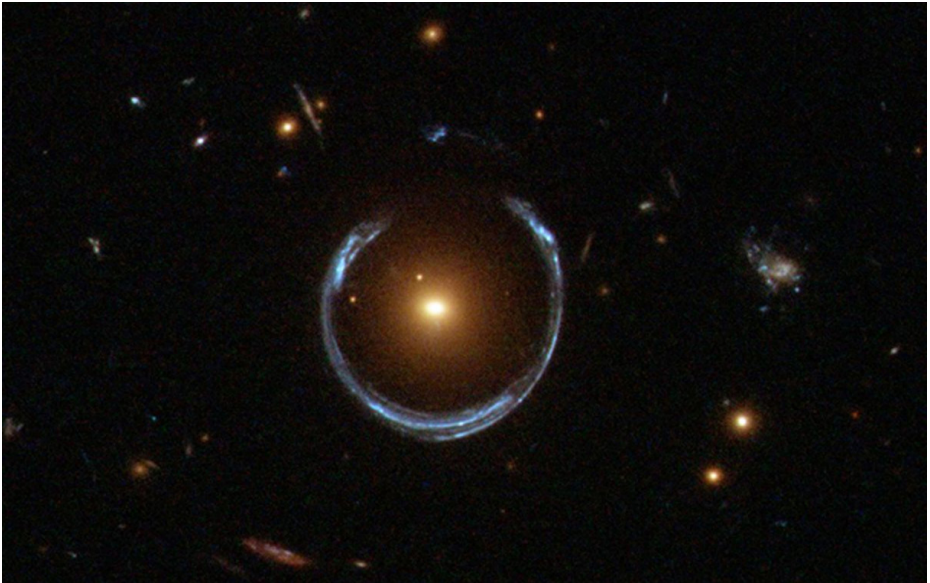
Fig.24 | „Cosmic horseshoe" black sphere with highly distorted, strongly flattened spacetime. A *black sphere* is a gap in the structure of space and time, so there is not even a vacuum „inside" because an „inside" DOES NOT EXIST. This means that we can actually „see" the lack of space and time in our universe which is indirectly „visible" in our universe as a *black sphere*. Thus, this object is not a „black hole" but a *black sphere*.

As one can see on the above photo (Fig. 24), a *black sphere* is also a kind of gravitational magnification lens as well, which shows a magnified picture of objects located behind a *black sphere*. The *cosmic horse shoe black sphere* is actually visible to us due to the fact, that in this very special case a galaxy is positioned exactly behind the *black sphere,* which appears extremly distorted and magnified. This is crucial in respect to the correct interpretation of the *background radiation*, which is a result of gravitational magnification as well . We will discuss this later. Thus, there is no „black hole" leading to a *singularity* or to another universe. This interpretation is absolute nonsense and has nothing in common with sound physics. The object, shown above, is actual evidence, that proves the existence of *black spheres* in our universe. Many thanks to the engineers who made the Hubble-telescope a reality (**in addition see fig. 18**).

The „edge" of a *black sphere* is an *inner boundary* of the universe. It is indeed legitimate to describe a *black sphere* as a kind of *5th dimension,* because there is no universe „within" it. The *5th dimension* is definable as a lack of the three dimensions *length, breadth*, *height* and the fourth dimension *time,* observable in the form of *black spheres*, since we can observe it in our universe. Thus, the *5th dimension* truly exists and it is not a figment of the imagination or an abstract mathematical construct. Hence, the existence of the *5th dimension* is empirically proven! Once again, „black holes" into which things can fall, after passing an „event horizon", are pure nonsense and do not exist in our universe. They exist solely in the imaginary world of science fiction and some „esoteric fraternities". Hawking has quite properly recognized, that a loss of information is not allowed at all. However, this would happen if black holes were to exist. The following illustration (Fig. 25) will help you to imagine how a *black sphere* actually works.
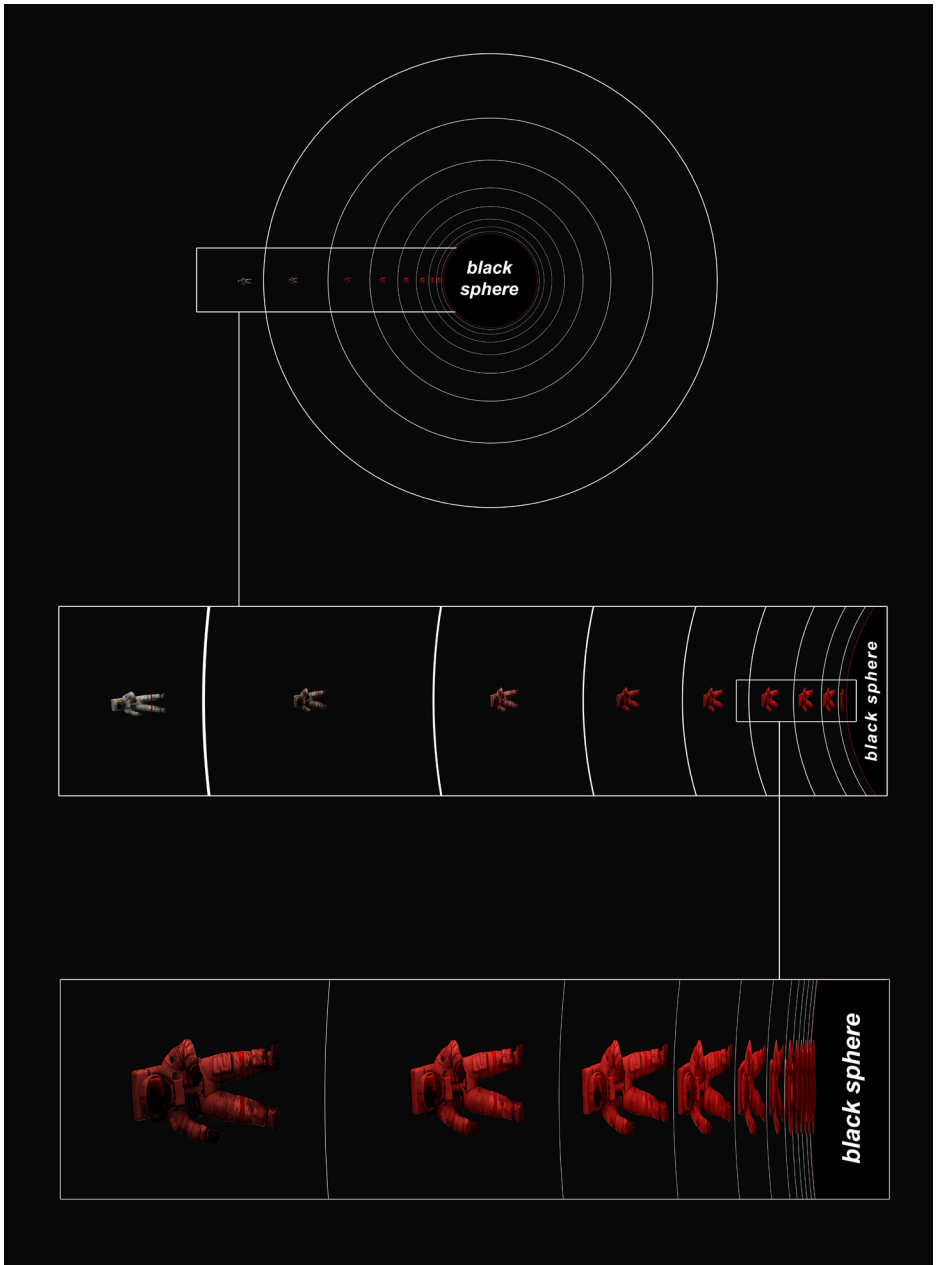
Fig. 25 | Illustration of space distortion while an astronaut is approaching a *black sphere (lack of space and time)*.

The above illustration (Fig.25) visualizes the solution of Hawking's paradox. The approaching astronauts do <u>not</u> exceed an nonsensical „event horizon" and do <u>not</u> get lost, because our universe is of course a closed system. The „event horizon" cannot be exceeded by the astronauts, because an „event horizon" simply does not exist: The astronauts fall into the direction of the *Schwarzschild asymptote* WHICH IS NOT AT ALL EXEEDABLE. But, what happens, when an astronaut falls toward the *Schwarzschild asymptote*? Imagine that an external observer and an astronaut agreed, that the astronaut, while falling towards the *Schwarzschild asymptote*, would continuously wave his arms (one time per second). While the astronaut is approaching the *Schwarzschild asymptote*, the external observer has the impression, that the waving of the astronaut becomes increasingly slow. With the increasing approximation to the Schwarzschild asymptote, the astronaut would appear increasingly red, because his light reflection becomes increasingly red-shifted. Simultaneously, the astronaut would seem to be increasingly flattened. Soon the astronaut would become invisible, because the light reflection from the astronaut is red-shifted to the infrared range by the enormous gravity of the *black sphere*. Further observation of the falling astronaut is, however, possible with the help of an infrared detector. To an observer it seems that the wave of the astronaut comes almost to a standstill, the closer he comes to the *Schwarzschild asymptote*, that is the border of the *black sphere*. To the observer time is increasingly delated during the observed free fall, but never comes to a complete stop. In our universe this is impossible. Eventually, we can observe the deadly impact of the astronaut on the surface of the collapsed star, albeit in a very long wavelength range of the electromagnetic spectrum and in extreme slow motion. R.I.P.

By the way, the „spaghetti death" of an astronaut while falling „into" a „black hole" is as preposterous as the idea of the „black hole" itself. It is argued that an astronaut would be gradually stretched after passing the „event horizon" of a „black hole" and eventually be ripped apart. The impact of an astronaut, falling towards a *black sphere,* is definitely fatal, although, the astronaut does not die in the shape of a human spaghetti but rather in the shape of a human pancake.

event horizon

singularity
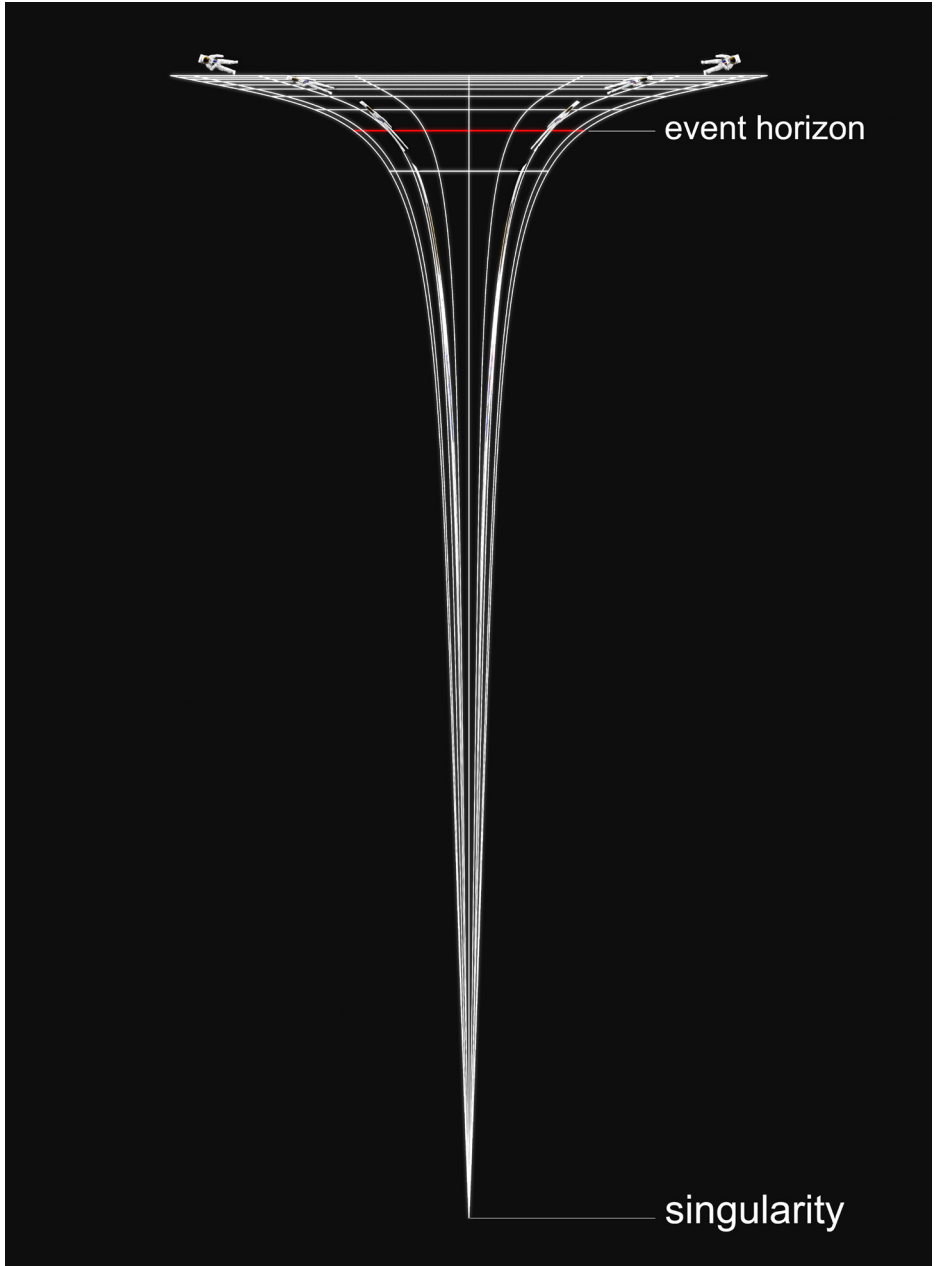
Fig. 26 | Illustration of the wrong assumption that an astronaut could exceed an „event horizon" of a „black hole" and would be streched like a spaghetti.

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But enough of spaghetti deaths or wormholes, both are completely impossible and pure nonsense. **However, *black spheres* also mean the end of *Hawking radiation* (18)**. The Schwarzschild radius, i.e., the *Schwarzschild asymptote* is not exceedable, as we know. Due to this fact the question arises: what is located „behind" the *Schwarzschild asymptote*? We already know that space is distorted by a *black sphere*. Space and mass are located in front of the *Schwarzschild asymptote* without ever reaching it. This means, that a „behind" the Schwarzschild radius actually does not exist. When we open a door, we will find a room or an outside behind the door, but not a lack of space. In regard to a *black sphere*, our ability to imagine things in three dimensions is stretched to its limit. What is to be found „behind" the *Schwarzschild asymptote* cannot be part of our spatial world, thus, we cannot actually imagine what is „there". „There" must be another dimension, a kind of *5th dimension.* That may sound odd to one or other readers, nevertheless , it is a fact and, moreover, an observable fact, which is a reality within our universe in the form of *black spheres*. In Quantum physics, the phenomenon *entanglement* (for details see item 18, appendix) is well-known. *Entanglement* is a very strange effect. Two spatially separated particles seem to form a single unit in a superordinated dimension, in a superordinated *5th dimension.* So, in quantum physics a superordinated *5th dimension* is nothing to get excited about. The following illustration will help you to clarify, how a collapsing star forms a *black sphere*. The collapsing star successively forms a *black sphere*, beginning in the centre of the collapsing star. The more the star collapses, the more the *black sphere* inside the collapsing star „grows"and the more space is displaced and distorted. Finally space, mass and time are located in the periphery of the *black sphere* (see item 22). This means, that a *black sphere* defines a gap in the spacetime structure of our universe. Nothing disappears into the „inside" of a *black sphere* or is able to escape from our universe. The same effect of distortion is observable when an object is approaching another unexceedable asymptote, which is already well known, the speed of light. In both cases we are simply faced with relativistic effects, explained by Einstein and Schwarzschild 100 years ago. It beggars belief, that so-called „modern cosmologists" postulate an extremely stupid „black hole theory" which is based solely on classical physics and do not consider relativistic effects. This is only simplistic and borders on deliberate deception. Either that or it is an evidence of scientific ineptitude! As already mentioned, the

5th dimension is reality and one can actually observe it in the form of *black spheres*. The „*cosmic horse shoe*" (Fig. 24) is a very impressive example and evidence of an actual *black sphere* in our universe. Is it not great? Now, let us consider the universe on the basis of the *black sphere* phenomenon. What does the universe have in common with a *black sphere*?
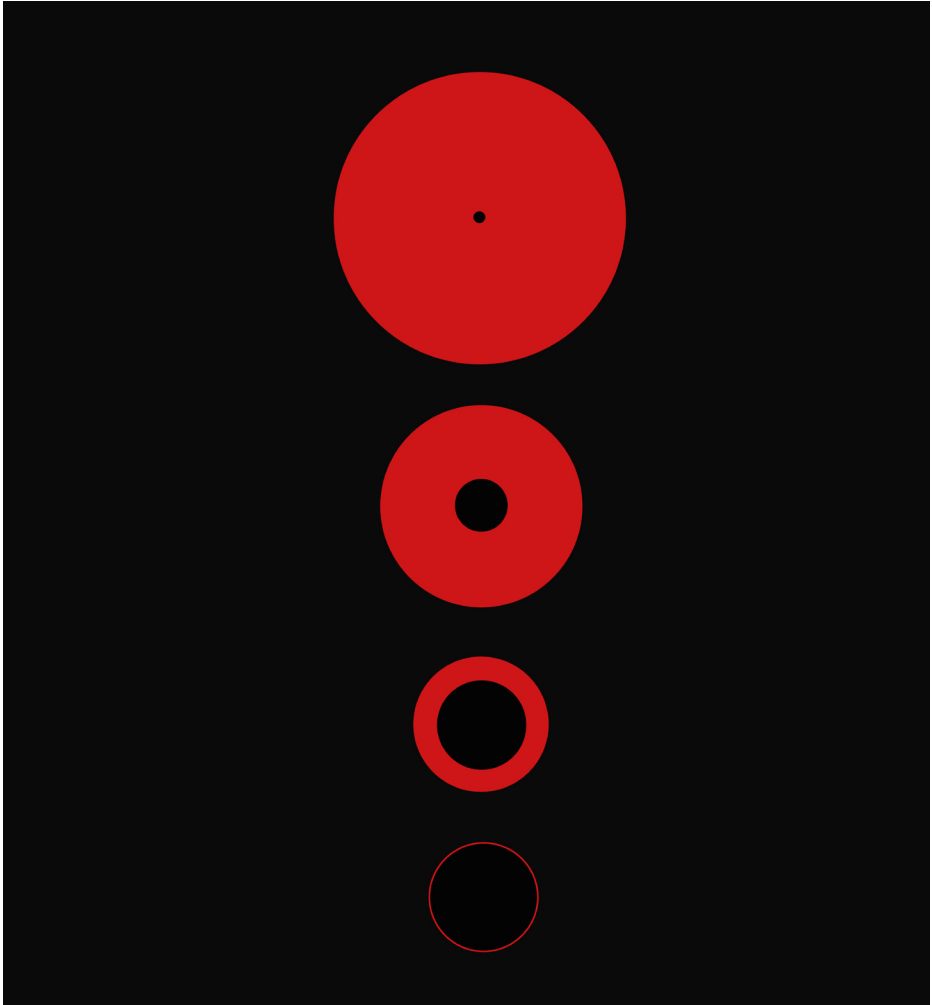
Fig. 27 | Illustration of a growing *black sphere* while a star is collapsing towards its Schwarzschildradius, i.e. Schwarzschild asymptote. The mass of the star is inceasingly displaced and finally forms a kind of shell which contains the enire mass of the star. There is no singularity of space and time.

THE UNIVERSE AND THE *BLACK SPHERE* PHENOMENON

The entire universe can be considered as a huge *black sphere*. However, there is a significant difference between a *black sphere*, as described previously, and the universe. The described *black sphere* phenomenon forms part of the universe, accordingly, it is located *within* the universe. Within the universe, space can never be completely flattened (the spatial dimension can never become zero within the universe), otherwise, the completely flattened space and everything within this space would disappear and, as a consequence of this , escape from the universe. This is due to relativistic reasons and due to the law of energy conservation under no circumstances possible. Thus, the 3rd dimension can appear extremely small to an observer (theoretically down to the Planck length), but it can never become zero in our universe. This would contravene the law of energy conservation. Let us consider again a compact collapsed star that forms a *black sphere*. As already described, external observers notice increasing space distortion in the vicinity of a *black sphere*, which increases the closer they look towards the border (Schwarzschild radius asymptote) of a *black sphere*. The further the distance from a *black sphere*, the less space is distorted and the more space seems to be „normal". Let us imagine, that we supply increasingly more mass to a *black sphere*, then, of course, the *black sphere* will increase within the universe. We can continue this procedure until the entire mass of the universe is supplied to the *black sphere*. The more mass we supply, the larger the *black sphere* becomes within the universe until finally the *black sphere* fills the entire universe, because the entire mass of the universe is contained. However, where is the space of the universe? Notionally, we have to imagine an „external observer", observing the universe from the „outside". In this case the space of the universe could notionally be considered to be completely flat, forming a globular „surface" of the *„universal black sphere"*. As we already know, such a spatial singularity, i.e., a reduction of the third dimension „height" until it finally attains the value zero, is not allowed within our universe, but when we consider our entire universe as a huge *black sphere*, notionally observed from the „outside", it is indeed allowed. Of course, the universe is not flat in reality, thus, for us, who we are living within the universe, but this is the only way

in order to understand how the universe works and what is the real cause of *background radiation*. Thus, we have to notionally consider the spatial dimension as a two dimensional surface, although we, of course, experience our universe as unlimited space, due to the fact, that we are located within the universe. The imagination of a flat but globular universe is just a notional trick to be able to understand the dynamic of the universe. We are not able to really imagine the universe, because our brain can only think in three-dimensions. In order to be able to understand the dynamics of the universe, we have to imagine, that we would be virtual observers from the level of a kind of 5th dimension and that we could observe the universe from the „outside". Thus, we notionally have to imagine the universe as a completely flat globular surface, forming a kind of globe. However, this globe does not contain anything. Space, time and mass of the universe are not located within the notional globe, but „inside" the completely flat „surface" of the globe, the *universal black sphere*. We will never have a chance to understand the riddle of the universe if we do not notionally leave the universe.

The „size" of the *universal black sphere* that is formed by the universe itself, depends solely on the *mass of the universe*, the *speed of light* and the *gravitational constant*. Without mass, there would not be space and there would not be space without mass. The mass of the universe defines the spatial extent of the universe. Mass and space are equivalent, i.e. interdependent. If one internalizes this idea of the universe, then one is able to understand how the universe „works" and, furthermore, to understand the real nature and meaning of the observed *background radiation*. Based on this, we are enabled to determine the mass of the universe and the real extent of the universe by means of the *Pioneer anomaly*. This will be done in a later section. The result is anticipated at this point. **The mass of the universe is approximately $3.473\ldots\cdot10^{52}$ kg, with an uncertainty of $\pm15\%$. The diameter of the universe is about 22 billion light years with an uncertainty of $\pm15\%$.** This tolerance range results from the measuring uncertainty of the *Pioneer anomaly*. We can achieve more precise values if we shoot satellites into space to measure the anomaly (the gravitational potential of the universe) more precisely. But let us take another example to enhance the notion of the described phenomenon and to improve the understanding of how we can imagine the universe.

Fig. 28 | We have to imagine the universe as similar to a soapy bubble without content. The universe, its mass, space and time notionally form a „universal bubble", i.e. a „universal sphere".

When you were a child, you almost certainly made soapy bubbles with the help of soapsuds. The defining property of such a bubble is that it consists of an extremely thin soapy-water film which forms a globular soapy membrane. The sphere formed by this membrane contains air and outside the membrane there is air as well. You can imagine the universe in the same way. The universe forms, in the figurative sense, a kind of membrane, formed like a globular soapy bubble. However, this universal sphere does not „contain" air, but rather a kind of 5th dimension, which represents a lack of space, time and mass. „Outside" this sphere we can also „find" the 5th dimension. Thus, we must imagine the universe as similar to a soapy bubble, that separates air from air, thus, the universe can purely and simply be notionally considered as a kind of globular membrane, separating the 5th dimension from the 5th dimension.

However, we, ourselves, perceive our universe as an infinite space. We just have the impression of living in a universe with an infinite spatial extent. If one internalizes this idea, then it will be easier to understand

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the phenomenon of *background radiation*, and the phenomenon of *Pioneer anomaly* and furthermore Einstein´s notion of the universe. We have to remember, that in the past, people had a similar question to that facing us today. They wanted to know, how the earth was shaped and what it is mounted on. Nowadays we want to know the „shape" of the universe, how it works and within what the universe is „embedded". Just as we now know, that the earth is not a disc, but rather an unmounted globe levitating in space, we have to overcome the idea of a Big Bang and an expanding universe. This old fashioned idea is as stupid and ridiculous as the idea of a disc-shaped earth, mounted on elephants and a turtle. Although our brain cannot actually imagine the „real shape" of the universe, we can use the notion of a globular membrane to understand how the universe works. Even if this idea of a globular, non-expanding universe might seem strange to you at first glance, this idea explains everything and yet offers amazingly simple and conclusive solutions pertaining to the great mysteries of cosmology. The most important point is, that we do not need a ridiculous Big Bang to explain *background radiation*, just as we do not need so-called *dark energy*, which is supposed to be the energy accelerating the apparent increasing expansion of the universe.

Additionally, the fact that *dark matter* cannot and does not exist will also be fully explained later on in this book. Our observable and empirically accessible universe represents not only 5% of the universe (as actually presumed by the so-called modern cosmologists) but rather a full 100% (item 3, appendix), which sounds eminently more believable and reasonable than the esoteric nonsense of a kind of mystical *dark force* representing 95% of the universe. Perhaps the so-called „scientists" who postulate such dark forces in the form of dark energy and dark matter have just watched too many "Star Wars" movies. In addition, we can throw the theory of superluminal spatial inflation after a pseudo Big Bang into the trash can, as well as the theory of pseudo-gravitational waves of a pseudo Big Bang. History will one day reveal that the fraudulent „gravitational waves" of a pseudo Big Bang represent the highest level of idiocy that has been thought up by cosmologists since the postulation of the nonsensical *epicyclic planetary motion model* (7). As we live in a high tech age it is inexcusable that such shameful nonsense

as the „gravitational waves of a Big Bang" is seriously postulated. We will discuss the dynamic of the universe in more detail in the course of this book, but for now we have to approach the background of the so called *Chandrasekhar limit*. In 2011, a Nobel Prize was awarded for the supposed confirmation of the Big Bang with help of so-called *type 1a supernovae* (8). The irrelevant Chandrasekhar limit played a central role in this.

CHANDRASEKHAR LIMIT

At this point, we have to discuss throroughly the preposterous ideas of an Indo-American physicist called *Subrahmanyan Chandrasekhar*. He postulated a limiting mass, beyond which a collapsing stellar remnant would remorselessly shrink into nothingness, a so-called singularity. In the following, we will use graphics to visualize how the shape of a rotating, collapsing star remnant is influenced by the conservation of angular momentum and which conclusions were falsely reached due to Chandrasekhar's simplistic interpretations. The illustrations are based solely on classical physics. We are already familiar with these types of illustrations. In this section, we do not consider relativistic effects as described by Einstein's theory of relativity, but solely the inertial system „collapsing star" itself. We already considered relativistic effects in respect of collapsing star remnants in the section „*Relativistic effects and collapsing stars*" along with how those effects appear to an external observer. We already know that the idea of so-called „black holes" is wrong.

However, in order to understand the logic by which Chandrasekhar calculated his Chandrasekhar limit, we have to pretend, that „black holes" and the associated „event horizon" exist and that a mass actually has the ability to shrink beyond its „event horizon". For now, we have to follow this classical logic, because it is the only way to understand the subject matter of this chapter and to understand the absurdity of the Chandrasekhar limit. Nevertheless, Chandrasekhar was awarded a Nobel Prize and, furthermore, a satellite, for detecting X-radiation, was named after him. Chandrasekhar studied astronomy at the University of Cambridge and his dissertation supervisor was the world famous British astronomer Sir Arthur Eddington. Eddington was often left fuming by Chandra and his calculations concerning collapsing stars, with his main criticism being, that Chandrasekhar's calculations did not take relativity into account. Eddington, of course, recognized that the whole approach of Chandrasekhar's calculations, aimed at deriving an upper limiting mass for stars called *white dwarfs*, was complete nonsense and was based on numerous incorrect conclusions, which will be analysed in this chapter. Upon completing his dissertation, Chandrasekhar migrated to

the USA where he later acquired American citizenship. At the beginning of the 1930's, Chandrasekhar released the following limiting mass of so-called *white dwarf stars* (burned-out low-mass stars. You do not need to memorize the following equation because it is pointless, however, we will identify what the following numerical value of Chandrasekhar´s equation is telling us later on.

Chandrasekhar limit:

$$M_{crit} = 1.45727 \; \left(\frac{2}{\eta}\right)^2 M_{solar\ mass}$$

A burned-out collapsing star which contains more mass than this limiting mass should shrink into nothingness, according to Chandrasekhar. Later, it was postulated that an additional intermediate state would emerge, the state of a so-called *neutron star (14)*. The value „η" in the denominator of the fraction stands for the ratio of the mass number of the atomic nuclei to the atomic number (to be found in the periodic system of elements). The value of this ratio is, for elements up to and including iron, about 2 (with the exception of atomic hydrogen and lithium). Hydrogen and lithium exist in burned-out stars in relative low quantities and iron accumulates at the end of the nuclear fusion chain, thus, the term in the brackets is normally about 1 and the so called Chandrasekhar limit is then normally about 1.46 times the solar mass. The term „$(2/\eta)^2$" supposes to refer to the elementary composition of a star. However, this term has absolutely no validity. It does not describe any state within stars and is purely mathematical gimmickry, which is probably intended to make the Chandrasekhar equation appear more complex. The knowledge of nuclear physics at the beginning of the 1930´s was in no way adequate for describing the interior processes of a star. In addition, Chandrasekhar was not a nuclear physicist but an astronomer. As late as 1935 the German physicists Karl Friedrich Weizsäcker and Hans Bethe postulated, for the first time ever, a possible nuclear fusion process in the interior of stars. Chandrasekhar's limiting mass was postulated in 1930! If only because of this fact, it is a shame that the Chandrasekhar equation is still significant in the field of cosmology. We will see that Chandra´s supposed limiting mass also played an important role in

respect of Big Bang research. As already mentioned, Chandrasekhar thought, that his derived limiting mass would represent the maximum mass of a *white dwarf star*. Stars with a larger mass would collapse into nothingness (black hole), according to his opinion. The following graphic represents a collapsed star, containing the critical mass calculated by Chandrasekhar, thus, with 1.46 times the mass of our sun.
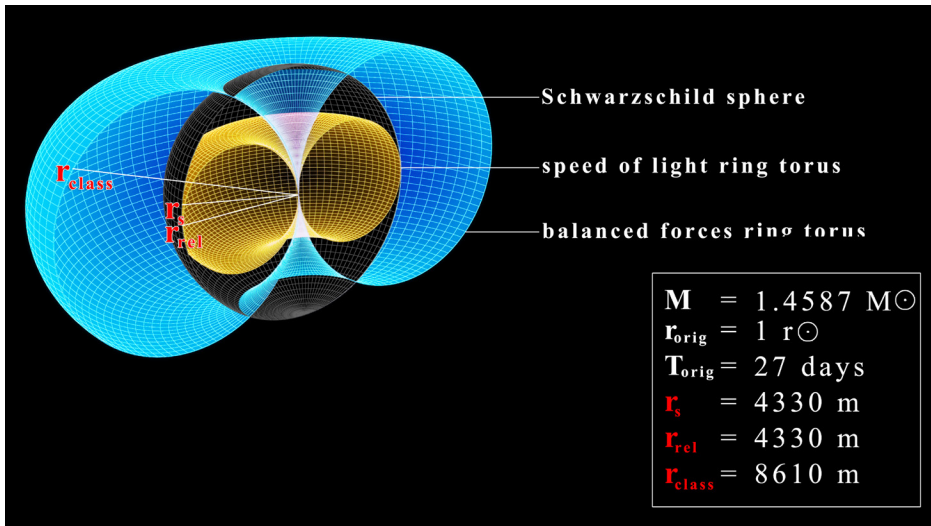
Fig. 29| Collapsed star with an original radius of the sun and an original rotational period of the sun of 27 days, containing the Chandrasekhar limiting mass (1.46 times the mass of the sun).

The figure shows a star, whose *classical speed of light contraction boundary* (yellow donut) - in strict accordance with classical physics - could indeed become a „black hole". As we can see, the yellow ring torus fits perfectly into the Schwarzschild sphere (black globe). At first glance, Chandrasekhar's calculation seems to be correct according to the classical laws of physics. We recall that the *classical speed of light contraction boundary* is defined by the radius of a collapsed rotating star at which its rotational speed would reach the speed of light. However, a rotational speed equal to the speed of light is not possible. According to Einstein, the mass of a collapsed star with a rotational speed equal to the speed of light would increase endlessly and, thus, the gravity of the star would increase endlessly as well. This in turn would lead to an immediate collapse of the entire universe (see chapter: *Collapsing stars and relativistic effects*). Thus, the basis of Chandrasekhar´s calculations

was a radius (*classical speed of light contraction boundary*) which can never be reached in reality. This fact reveals the senselessness of the Chandrasekhar limit. As one can easily see in the above illustration (Fig. 29), the balanced forces contraction boundary (blue ring torus) prevents the collapsed star from reaching the *speed of light contraction boundary*. The major part of the blue ring torus is located outside the classical „Schwarzschild sphere" (black globe) of the depicted collapsed star, containing Chandrasekhar´s limiting mass. In order to recall, the *balanced forces contraction boundary* is definied by the radius of a collapsed rotating star at which the *gravitational force* of the collapsed, rotating star and the *centrifugal force* are balanced; a further contraction is not possible.

As we can see, the impossibility of reaching the *speed of light contraction boundary* was not an obstacle to Chandrasekhar, although, Sir Arthur Eddington had pointed out, that this boundary could not be reached by a collapsing star. In reality, the collapse of a rotating star stops at the latest at the *balanced forces contraction boundary*, i.e. the *centrifugal force* does not allow any further contraction. However, the Chandrasekhar limit is questionable for another reason. Chandrasekhar had tacitly derived his equation based on the radius and the mean rotational period of the sun. In the graphic above (Fig. 29), you can see the values we have to calculate with in order to place the *speed of light contraction boundary* of a star, containing the mass of the Chandrasekhar limit, exactly within the Schwarzschild sphere (black globe) of this particular star. However, it is possible to achieve the same result as depicted in the graphic above, even if other stellar masses are used. We simply have to choose the radius and the mean rotational period of any stellar mass in such a way that the corresponding *speed of light contraction boundary* just fits into the Schwarzschild sphere (black globe) of the corresponding stellar mass! Thus, Chandrasekhar's limiting mass has absolutely no significance. It is not worth the paper it is printed on . Nevertheless, the insignificant Chandrasekhar limit is inexplicably of utmost importance in regard to so-called *type 1a supernovae* (8).
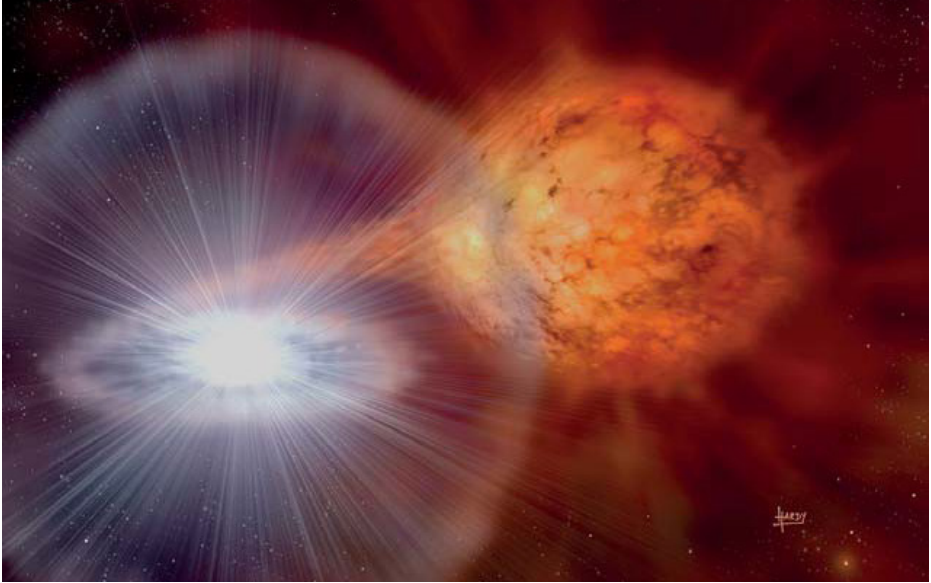
Fig. 30 | Artwork of the space artist David Hardy. Displayed is a binary star system with a white dwarf on the left and a red giant on the right. The white dwarf sucks off hydrogen gas from the red giant. After the accumulation of a defined sucked off mass on the surface of the white dwarf, nuclear fusion starts which can be observed as a nova or supernova.

Type 1a supernovae were the basis of studies for „verifying" distances in the universe, which in turn allegedly proved the expansion of the universe. These explorations led to a Nobel Prize in Physics in 2011. Given that the basis of these investigations was wrong, then all the investigations were a complete waste of time and the Nobel Prize is not worth a thing. There is no clearly defined limiting mass beyond which - based on classical physics - a collapsing star could become a „black hole", because in addition to the mass of a star many other unknown parameters influence the fate of a star, such as the radius of a star and its rotational period. Since the sun is very close to us, we know its rotational period and its radius very accurately. However, the same does not apply to all other stars. They are, in fact, so far away from us, that we can only detect stars as points without extent. In spite of the advanced telescopes that are now available, we have no capability to measure stars empirically in terms of their radii and their rotational periods. We can only rely on guesswork regarding these matters. The following calculations are based on the mass-radius ratio „$r^{0.6} \sim M$", used in astrophysics (*for example: a star with double the mass of our sun would have, according to this ratio, a*

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radius of 2 $^{0.6}$ ~ 1.51 times the radius of the sun). This relation is applied to stellar masses larger than the mass of the sun. In the astronomical literature, the following mass classification is often encountered: stars with a mass larger than the Chandrasekhar limiting mass would become *neutron stars* or *pulsars* while stars of smaller mass would become *white dwarf stars.* About three solar masses and more would be necessary to allow a star to definitely become a „black hole". It is not necessary to keep this classification in mind, since this classification has no validity at all. We now know that there exist a multitude of unknown parameters, that determine the fate of a star, of which we have no knowledge. As we shall see, these parameters give rise to enormous uncertainty margins.

The graphic below (Fig. 31) shows a star containing the *mass of the sun*. It shows the same results as for the star containing the *Chandrasekhar limiting mass (1.46 solar masses)* considered earlier (Fig. 29). The ring torus of this star, defined by the *speed of light contraction boundary* (yellowish ring torus), fits perfectly into the particular Schwarzschild sphere (black globe) of this star as well. What have we done? We have simply plugged in a somewhat smaller rotational period of *41 days* into our calculation, contrary to the actual mean rotation period of the sun (*27 days*). Now the yellowish torus fits perfectly into the „Schwarzschild sphere" (black globe) of the corresponding star, simply, because we have altered the value of the rotational period of the sun a little bit. As you can see, there are infinite possibilities of manipultation. This example demonstrates that the Chandrasekhar limit does not make any sense. A confirmation of a „pseudo-Big Bang" on the basis of this limiting mass is complete nonsense. **Thus, the Nobel Prize in physics awarded in 2011 and the Nobel Prize in Physics awarded in 1983 (apart on William Alfred Fowler´s Nobel Prize) are, upon closer examination, dubious.**
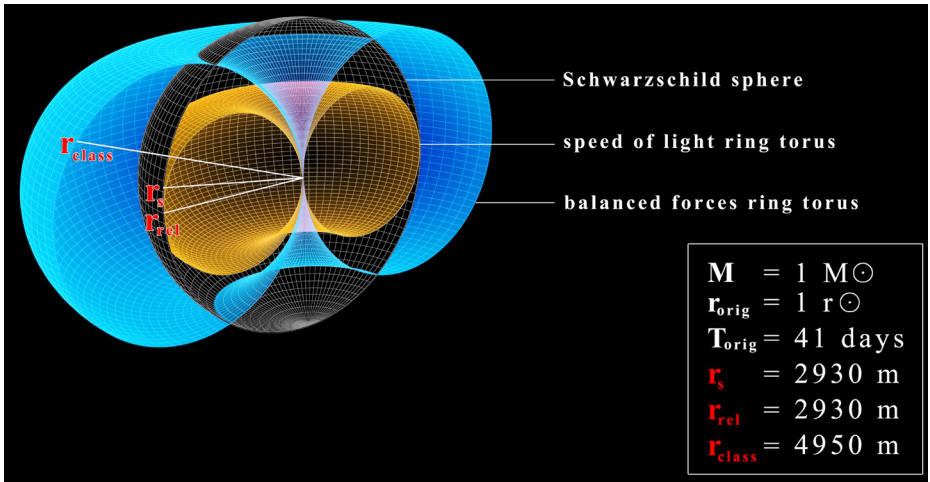
Fig. 31 | Illustration of the two different boundary radii of a collapsed star containing the mass of the sun but with an assumed original rotational period of 41 days.

Schwarzschild sphere

speed of light ring torus

balanced forces ring torus

r_{class}
r_s
r_{rel}

$M = 1\ M\odot$
$r_{orig} = 1\ r\odot$
$T_{orig} = 41\ days$
$r_s = 2930\ m$
$r_{rel} = 2930\ m$
$r_{class} = 4950\ m$
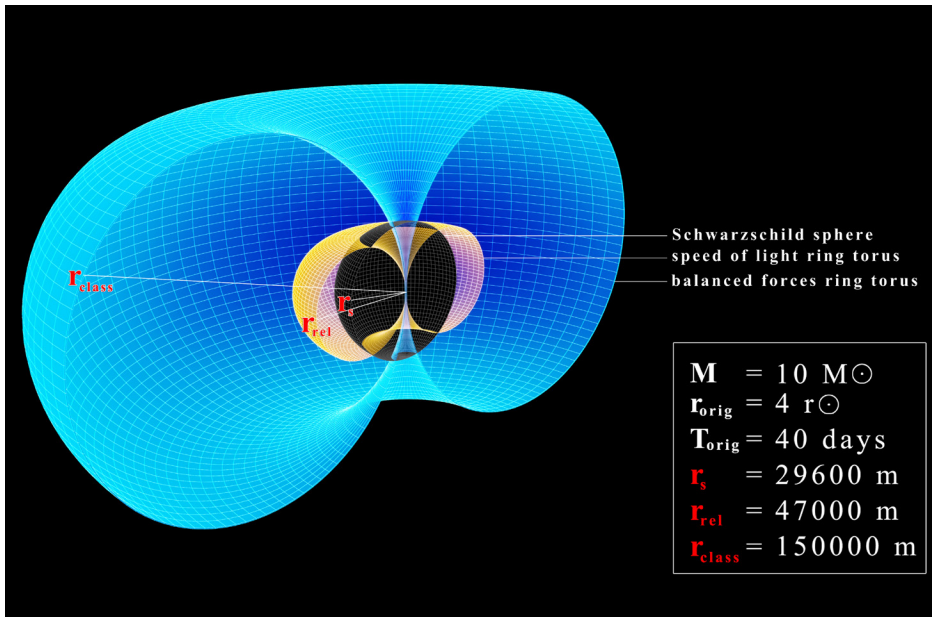
Fig. 32 | Illustration of the two different boundary radii of a collapsed star with ten times the mass of the sun, an original radius of four times the radius of the sun and an original rotational period of 40 days..

Schwarzschild sphere
speed of light ring torus
balanced forces ring torus

r_{class}
r_s
r_{rel}

$M = 10\ M\odot$
$r_{orig} = 4\ r\odot$
$T_{orig} = 40\ days$
$r_s = 29600\ m$
$r_{rel} = 47000\ m$
$r_{class} = 150000\ m$
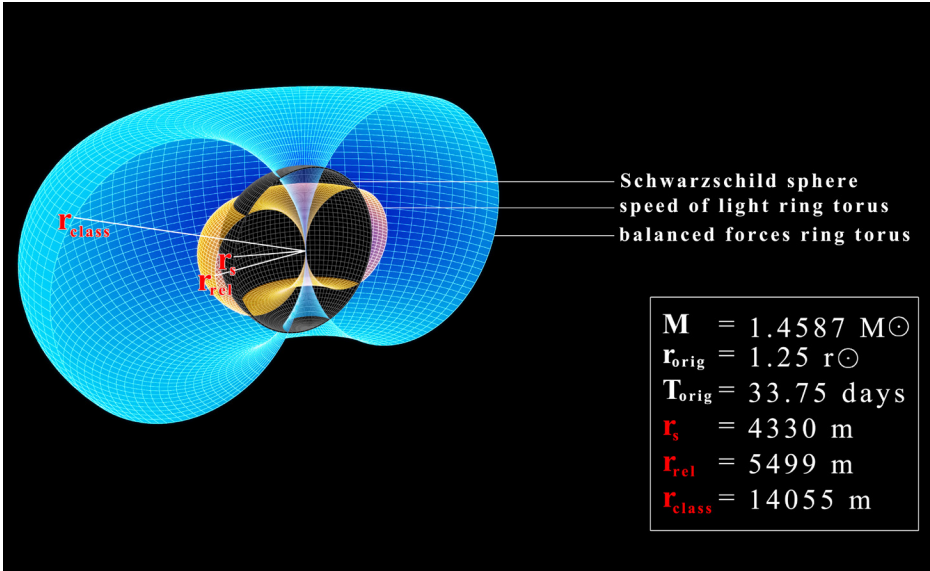
Fig. 33 | Illustration of the two boundary radii of a star containing the Chandrasekhar limiting mass, an assumed original rotational periode of about 34 days and a 1.25-fold radius of the sun.

A star with *10-times the mass of the sun* and a *rotational period of 40 days* can be found in an additional illustration (Fig. 32, previous page). In spite of its large mass, this collapsed star does not form a „black hole", in the classic sense, due to the *law of conservation of angular momentum.* We recall the currently propagated mass classification, which states, that a star, containing at least three sun masses, would certainly become a „black hole" after it is burnt out and collapsed. Using the depicted illustration, we can see, that the classical spatial extent of both, the *classical speed of light ring torus* and the *classical balanced forces ring torus* are larger than the classical „Schwarzschild sphere" (black globe) of this particular collapsed star. Furthermore, a star containing the *mass of the Chandrasekhar limit* is shown (Fig. 33) with a *1.25-fold solar radius* (based on the aforementioned mass-radius ratio) and with a *rotation period of 34 days*. In this case, a considerable part of the *speed of light ring torus* is located outside the „Schwarzschild sphere" (black globe). Thus, it has been proven once more, that the *Chandrasekhar limit* is good for nothing except mathematical exercises. It is apparent, that there are plenty of factors influencing the fate of a star. We do not know neither the actual state of a star, the radius, the rotational period, the exact composition of

the star, the actual pressure conditions and temperatures, nor the mass that is blown out during the collapse, which of course has a tremendous effect on the angular momentum as well. It is naive to specify a general mass classification in order to define the fate of a collapsing star.
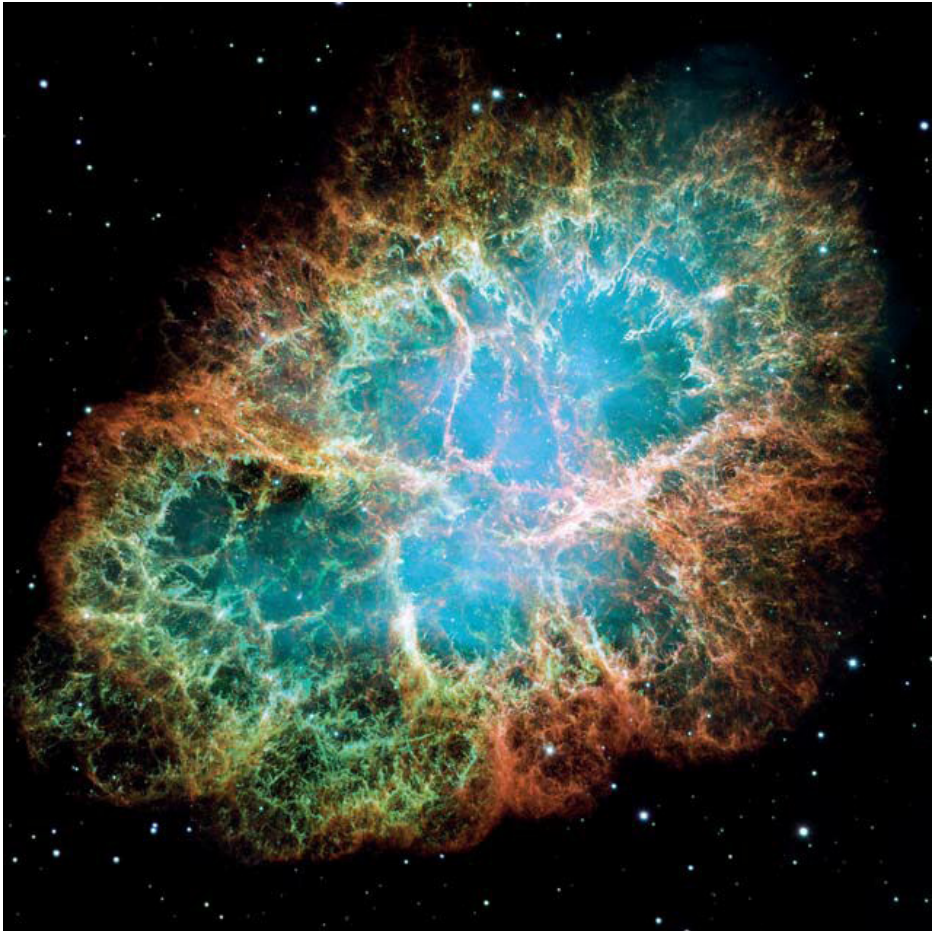
Fig. 34 | Displayed is an example of an exploded star which shows that a significant amount of the mass of a collapsing star is catapulted into space. This has a great influence on the angular momentum as well.

A very vivid picture (Fig. 34) of an exploded star is shown above. The mass of the stellar remnant in the centre of the so-called *Crab Nebula* contains just a fraction of the original mass of the exploded star. The

primordial mass, the primordial angular momentum and the primordial radius of the collapsed stellar remnant probably would have allowed the star to become a „black hole" or more precisely a *black sphere*.

Shown below are some illustrations (Fig. 35-38) of various collapsed stars with various values of original mass, original radius and original rotational period, prior to their collapse. Each star is principally subject to the fundamental law of conservation of angular momentum, which is of critical importance in deciding the fate of a collapsing star. It must be emphasized again, that the examples shown here, were calculated based on classical physics. Nuclear physical aspects have not been taken into account. However, we will make up for this in the following section.

Fig. 35

Fig. 36

Schwarzschild sphere
speed of light ring torus
balanced forces ring torus

M = 3 $M_\odot$
r_{orig} = 1.92 $r_\odot$
T_{orig} = 52 days
r_s = 8896 m
r_{rel} = 8536 m
r_{class} = 16388 m

Fig.37

Schwarzschild sphere
speed of light ring torus
balanced forces ring torus

M = 10 $M_\odot$
r_{orig} = 4 $r_\odot$
T_{orig} = 108 days
r_s = 29600 m
r_{rel} = 17300 m
r_{class} = 20000 m

Fig.38

Schwarzschild sphere
speed of light ring torus
balanced forces ring torus

r_{class}
r_s
r_{rel}

M = 2 M☉
r_{orig} = 1.51 r☉
T_{orig} = 41 days
r_s = 5931 m
r_{rel} = 6750 m
r_{class} = 15370 m

WHAT KIND OF STARS CAN END UP AS *BLACK SPHERES*?

We now know that the angular momentum is a very important determinant governing the collapse of stars. Of course, the angular momentum differs from star to star. However, if we consider a star without taking the angular momentum into account, the question arises: what is the specific value of the mass of a collapsing star which would allow it to form a „black hole" or rather a *black sphere*. Let us consider this aspect on the basis of *nuclear physics* and the *gravitation* of a collapsing mass. It is obvious, that our earth cannot form a *black sphere* since it does not contain enough mass to collapse under its own gravity, otherwise you would not be able to read this book now. The main question is: *What does a star actually consist of?* The major part of the mass of an atom consists of *nucleons (protons and neutrons)*. These nucleons have the maximum empirically ascertained density in our universe *(2 ·10^{17}kg/m^3, i.e. 200 million billion kg/m^3)*. Whether a higher density exists in our universe or not, is pure speculation. Aside from that, nucleons are not at all compressable. This in turn means that we solely have to deal with nucleons in respect of the following considerations. In order to not to speculate, we solely consider empirically ascertained facts. Calculations on the basis of suppositions that are not based on empirical evidence have nothing in common with sound physics, something which often seems to be forgotten in the field of cosmology. Remember, the basis of science is not speculation but empirical research. The mass of an electron is negligible relative to the mass of a nucleon (about two-thousandth of the mass of a nucleon). Consequently, the mass of the electrons can be neglected in our following rough calculation. Each star has, depending on its mass, a defined Schwarzschild radius, which is determinable by the laws of classical physics. This radius defines, in the relativistic sense, a quarter of the perimeter of a *black sphere* (see Fig. 23). However, in the view of classical physics, the Schwarzschild radius is half the diameter of a „black hole", which contains a defined volume. Let us call this volume the „*classical Schwarzschild volume*".

This kind of consideration is not wrong, but it does not consider the point of view of an external observer, thus, the relativistic aspect.

However, our classical consideration allows us to derive a very simple classical equation. If we follow classical logic and consider the „*classical Schwarzschild volume*", the question arises of how many tightly packed nucleons, i.e. protons and neutrons, could be located inside a defined „*classical Schwarzschild volume*" and, furthermore, what would be the resultant gravity. The diameter of an atom is determined by the orbitals of the electrons. The diameter of an atomic nucleus is only about 1/10000 to 1/100000 of the diameter of an atom (depending on the elements of the periodic system). Thus, an enormous compression potential exists here. We had already mentioned, that on this basis the nucleons of the entire universe would fit into a sphere with a radius of the orbit of mars. On this basis, we can now easily calculate to what extent a star can be compressed under its own gravity. Let us imagine the moment when a star is compressed to its maximum, so that the atomic nuclei, i.e. the neutrons and protons, are compressed to one single huge atomic nucleus and the electrons are edged off to the surface of the star, forming an extremely dense and highly conductive electron plasma (*chapter magnetars and item 14, appendix*). Since the universe mainly comprises the mass of nucleons and since we know their density, which represents the maximum empirically determined density in our universe, we can define a very trivial mathematical equation:

$$\frac{M_{star}}{M_{nucleon}} \cdot V_{nucleon} = V_{Schwarzschild\ sphere} = \frac{4}{3} \pi \left(\frac{2GM_{star}}{c^2} \right)^3$$

$$=> \sqrt{\frac{3}{4} \frac{V_{nucleon}}{M_{nucleon}} \frac{c^6}{8\pi G^3}} = M_{min}$$

This equation means nothing other than the answer to the question: *How much mass is required in order to tightly pack the nucleons of this particular mass into its corresponding „classical Schwarzschild volume"?* The nucleons of the sun, for example, do not fit into the corresponding „*classical Schwarzschild volume*" of the sun. The „*classical Schwarzschild volume*" of the sun is simply too small to allow the nucleons of the sun to fit, tightly packed, into it. According to the equation above, a minimum of about *5 solar masses* is

necessary to tightly pack the nucleons of a star with this specific mass into its corresponding „*classical Schwarzschild volume*". This again begs the next important question: *Is the gravitational force of a star, which is collapsed to its maximum and contains five solar masses, actually sufficient to allow the star to maintain this level of compression in a stable state?* This can be calculated on the basis of the *gravitational binding energy*. The necessary equation is:

$$E_{gravitational\ binding\ energy} = \frac{3GM^2}{5R}$$

Let us substitute „*M*" with the value of *5 solar masses* and let us substitute „*R*" with the corresponding Schwarzschild radius of a star with 5 solar masses. The result is a gravitational binding energy of about *316 MeV per nucleon*. Now, we have to verify whether this energy is sufficient to overcome the *Coulomb barrier* (item 16, appendix) of two atomic iron nuclei . Since the element iron is the final stage of the generation of energy by nuclear fusion, the collapsed star remnant should mainly consist of iron, thus, we do not consider heavier elements in our rough calculation. The minimum energy value to overcome the *Coulomb barrier* of two atomic iron nucleons is about *177 MeV per nucleon* according to the following equation:

$$V_C \approx \frac{Z_1 \cdot Z_2}{A^{\frac{1}{3}}}$$

Z_1 and Z_2 represent the atomic number of two atomic nuclei that are being pushed together. „A" stands for the mass number of one of the two atomic nuclei. V_C represents the magnitude of the Coulomb barrier expressed in electronvolts (MeV).

This means that the gravitational binding energy would in fact be sufficient to keep an already compressed stellar remnant stable. However, there is a big problem. In our calculations we have tacitly assumed, that the collapsed star is already in the state of maximum compression. However, a star containing 5 solar masses is not able to bring itself into this state solely via its own gravitation, i.e. to become as dense as an

atomic core. Once the star is compressed to its maximum, it is indeed stable but the gravitational binding energy alone is not sufficient to allow the star to reach this state. Another additional force is necessary to compress the stellar remnant to its maximum. However, what kind of force is able to actively compress a star as much that all nuclei can become tightly packed and remain this way. One might suggest a "dark force". No way. Just imagine an exploding star. The shockwaves of an exploding star are directed both, outwards *and* inwards. A fusion bomb works with the same principle. The energy required to start the nuclear fusion of a fusion bomb is obtained by the inwardly directed shock waves of an ignited fission bomb (ring detonation) which then supplies the necessary pressure and heat to cause the fusion of the hydrogen located in the centre of the bomb. In the same way, a stellar remnant can be compressed by detonation shockwaves in addition to its gravitation. However, the gravitational force and any kind of shockwave are not sufficient in order to compress a star remnant to the level of Planck density. Even billions and billions of solar masses would not be sufficient to create a Planck density.

Dear cosmologists, why didn´t you verify this important fact? Interestingly, the larger the mass of a „black hole", the less dense this mass must be in order to create a „black hole" (in the classical sense) or more precisely, in order to create a *black sphere* (in the relativistic sense). The larger the mass of a „black hole", the larger the „classical Schwarzschild volume", thus, the more space is available for the collapsed mass and the less this mass has to be extremely compressed to fit into its corresponding *„classical Schwarzschild volume"*. How can this be understood? We remember, the *„classical Schwarzschild volume"* of an increasing mass increases in proportion with the 3rd power (exponentially). See Fig. 39 on the following page. What does that mean? In the course of this book we will see, that, for example, the mean density of the „black hole" located in the center of the galaxy NGC 1277 (containing a mass of about 14 billion solar masses) is about 100 grams/cubic meter. Imagine, the mean density of air at sea level is about 1200 grams / cubic meter! Thus, the larger the mass of a „black hole" the more space is available for the collapsed mass. This will be explained in more details later on.

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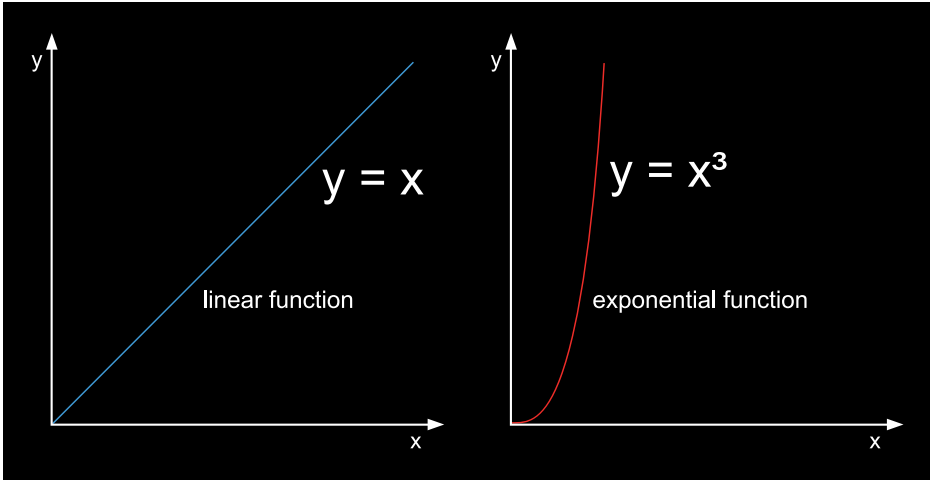
Fig. 39 | With increasing values for x the corresponding values for y indrease much more in an exponential function than in a lienear function.

We completely ignored the angular momentum of the star in our consideration. When we take the angular momentum into account and, furthermore, a multitude of other factors, it is, of course, not possible that a star with 5 solar masses would become a „black hole" or better stated a *black sphere*. A collapsing burnt-out star still contains a considerable mass of lighter elements (hydrogen, helium …) in its perephery. During their collapse most stars generate enough energy to allow these light elements to fuse. This action releases a tremendous amount of energy. All elements lighter than iron generate energy if they undergo fusion. This results in a gigantic explosion where a huge amount of matter is shot out into space, which is indeed what is observable in form of a *supernova*. During the nuclear fusion process of elements, heavier than iron, no energy is generated. In order to fuse elements heavier than iron, energy is actually required. This is the reason that gigantic atomic nuclei can, in principle, exist stably in our universe, held together by their own gravity, ie. nuclear binding energy. If energy were to be released during the fusion process of elements heavier than iron, all collapsing massive stars would explode and nothing would be left over. Thus, solely elements heavier than iron can be compressed into the state of a gigantic atomic nucleus.
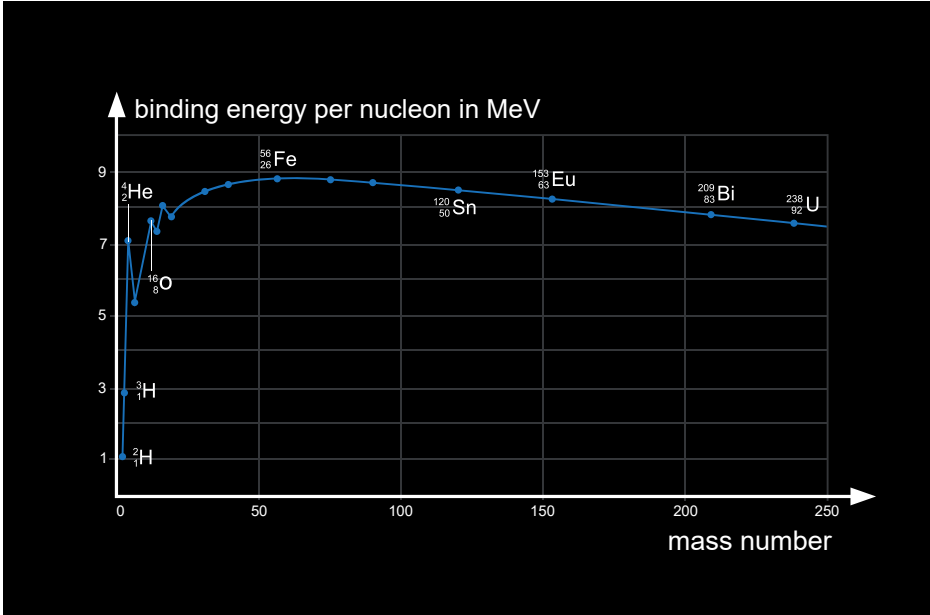
Fig. 40 | Graphical illustration of the binding energy per nucleon of different elements of the periodic system.

The minimum mass required to form a *black sphere* is in fact much more than 5 solar masses. In our universe it is more likely that stars containing more than 10 solar masses or even as much as 100 solar masses are actually able to form a *black sphere*, depending on many unknown factors which are, of course, not calculable. If we imagined that all stars containing a mass larger than the Chandrasekhar limit - or at least containing more than 3 solar masses – would finally form a *black sphere*, the universe would be cluttered with *black spheres*. However, this is not the case. The probability of a collapsing mass being able to collapse towards its Schwarzschildradius, increases with increasing mass. Reaching the Schwarzschild radius itself is, as we already know, impossible in our universe as decreed by the theory of relativity, for the same reason that a mass cannot actually reach the speed of light and that the speed of light is not exceedable. The Schwarzschild solution of Einstein's equations describes perfectly the asymptotical approach of a mass towards its Schwarzschild radius. The more mass a *black sphere* „contains", the more the gravitational potential of a *black sphere*

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decreases(!) and, thus, its capability of attracting other masses decreases as well. The more mass a *black sphere* contains (in its periphery), the lower the gravitational potential is. At first glance, this sounds counter-intuitive but this will be described in more detail later on in this book. We have already mentioned, that the mean density of what is falsely referred to as a „black hole" decreases rapidly with increasing mass, this means that the ability to attract other masses decreases as well because the mass is spread over a greater volume. Even if this might be surprising to you, this is a physical factum. This indicates once more that grotesquely high densities propagated in regard to collapsing objects are not at all necessary to form a *black sphere*. The larger a *black sphere*, the „smoother" it is. The more massive a collapsing star is, the more likely it is that it forms a *black sphere*, i.e. that it forms a globular gap in the space-time structure of our universe. A *black sphere* defines an inner border of our universe. Nothing can ever leave the universe by means of a *black sphere* nor is a *black sphere* a kind of hyper fast transit highway to travel to other places in our universe or to other universes. Such statements are pure „Star Gate Science Fiction" but very common in the field of so-called „modern cosmology".

WHAT IS THE UPPER MASS LIMIT OF A *BLACK SPHERE*?

An upper mass limit for *black spheres* cannot exist in principle. A *black sphere* never stops attracting mass and, thus, it can always continue growing. Nevertheless, the ability of a *black sphere* to attract mass decreases exponentially, the larger it becomes. We have already learned that the mean density of a *black sphere* decreases rapidly, the larger a *black sphere* becomes. The result is that the potential of a *black sphere* to attract another mass decreases, the larger it is. This is amazing, is it not? The „hunger" of a *black sphere* decreases exponentially with the increase of its containing mass which is located in the periphery of a *black sphere*. Thus, a maximum limit for *black spheres* does not exist but it is even more likely that very massive *black spheres* exist in our universe, due to the fact that stars with a lower mass than 10 or even 100 solar masses are not able to form a *black sphere,* as we already know. However, their ability to continue growing decreases drastically the larger they are. Thus, it is not possible, that a complete galaxy could finally form a huge single *black sphere.* If this would be the case, the entire universe consisted of super massive *black spheres* and no galaxy would be left over. The reality of our universe, however, looks quite different. Indeed, the gravitational stability of the universe is amazing. If we solely consider our planetary system, we can see how stable it is. Even our moon does not fall onto the earth due to gravitational interaction with our earth. Quite the contrary, moon and earth are receding from each other! The moon is a quite huge celestial object, containing a mass of *$7,349 \cdot 10^{22}$ kg,* orbiting the earth in a short distance of about *380000 km*. This is an amazing example of stability in our universe. Gravitational stability is the reason for the fact that the universe is not cluttered with *black spheres.*

MAGNETARS (MAGNETIC STARS)

Magnetars are stars which are characterized by an extremely strong magnetic field that can be several trillion times stronger than the magnetic field of our earth. Magnetars are collapsed stars which cannot be explained by present theories because, according to these theories, magnetars should not exist. We have already come across such a star in the course of this book. The illustration is displayed again below.
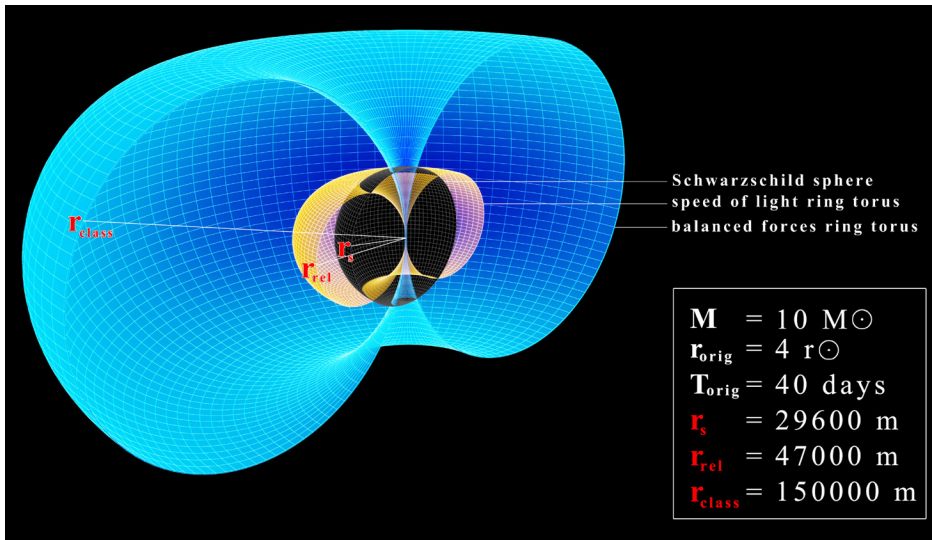
Fig. 41 | Possible magnetar of 10 solar masses shown in cross-section.

However, the currently propagated upper limiting mass of three times the solar mass, beyond which a star could become a „black hole", is nonsense and can easily be refuted by a high school student. The star shown above is a collapsed star containing ten times the mass of our sun. The major part (blue torus) of its mass, in the classical sense, is located „outside" of its corresponding „classical Schwarzschild sphere" (black globe). This star can easily generate an enormously strong magnetic field. Due to the enormous compression of its atoms, these atoms are ionised (nuclei without electrons) and the atomic nuclei are packed extremely thight. However, their former electrons are not „squeezed" into the protons but form an extremely dense electron plasma on the

surface of the collapsed star. Due to the extremely high speed of rotation, this electron plasma generates a gigantic magnetic field.
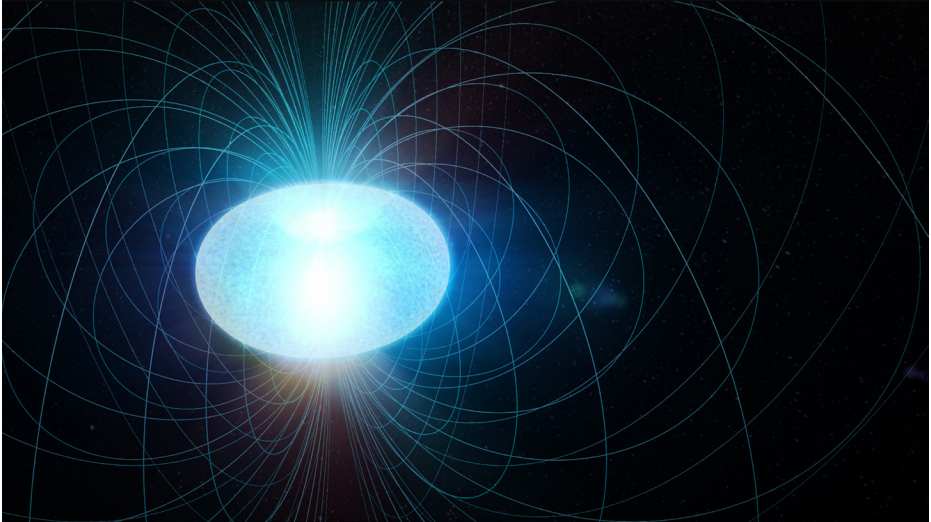
Fig. 42 | Artistic illustration of a torus shapedmagnetar based on the calculations in this book for a collapsed star with 10 times the mass of the Sun.

It is utterly incomprehensible that the phenomenon *magnetar* has not already been explained as it is in this book. Of course, if a completely erroneous limiting mass is assumed, beyond which a star should become a „black hole", and this assumption has not been verified yet, then this is not science but rather omission, How can it be possible that astrophysicists, who should be considered experts in physics, do not even check a collapsing star in regard to its angular momentum so that the *balanced forces contraction boundary* can be unequivocally determined? Thus, magnetars are no longer a mystery but readily explainable and mathematically describable phenomena. There are too many key people in the field of astrophysics, who seem to actively inhibit empirical science, either because they quite simply do not understand their craft, or, what seems more likely, because there might be dishonest aspects underlying their actions in order to make the esoteric at home in the field of cosmology. This is a very effective form of stupefaction of mankind. It will never be possible to understand the dynamics of collapsed stars, if in spite of the Schwarzschild solution, it is falsely claimed, that „black holes", which lead to a point singularity or to other universes, exist in our universe. Believing that „black holes", in the classical sense, i.e.
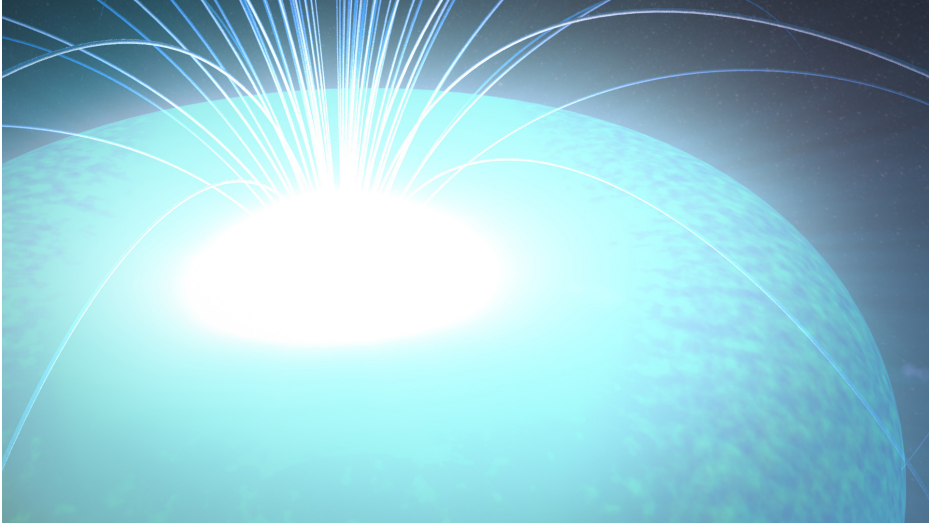
Fig. 42 | Detailed view onto the polar region of a torus shaped magnetar.

with an exceedable „event horizon", actually exist in our universe is pure science fiction. Classical „black holes" are, of course, complete nonsense, but relativistic *black spheres* are a reality in our universe. One is left with the impression that deliberate obfuscations and conscious abrogations of Einstein's laws are occurring. However, in the following we have to deal with the classical Schwarzschild radius. This is necessary in order to understand the scandalous mistakes regarding the Big Bang theory. As you can see, so-called „black holes", or better put, *black spheres*, are obviously the alpha and omega of the whole of cosmology, and based on these *black spheres*, which are mistakenly called „black holes", we can fully explain the dynamics of the universe. Before going into details regarding the Big Bang and its futility, we must continue with our considerations. The Schwarzschild radius of a collapsed star defines, in the classical sense, a sphere. The „edge" of such a „Schwarzschild sphere" is, as we already know, mistakenly called „event horizon" because it is said - according to „modern cosmologists"- that no information, no event, can escape from a „black hole". It is said that merely the gravity of a „black hole" is perceptible. In the following, we continue considering the phenomenon „black hole" in the classical sense, in order to understand some peculiarities better. Therefore, we use the common expressions „black hole" and „event horizon". These terms are set in quotation marks since we already know that these

terms originated exclusively from classical physics. For the moment we ignore relativistic physics. This classical consideration is the reason that the incorrect postulation of „black holes" arose. Once again, although we know that this interpretation is completely contrary to the statement of the relativistic Schwarzschild solution, we have to continue with our considerations on the basis of classical physics since in this way the mistakes of what is falsely called a „black hole" become very clear. The results of classical physics are valid, however, albeit solely based on the reference system of the „collapsed star" itself and not based on the observations made by a stationary external observer, thus, not based on relativistic aspects. Because we observe celestial objects with our telescopes, we are external observers and, thus, we observe relativistic effects. Consequently, classical considerations take a backseat. The actual comprehensive description of observed collapsed stars in our universe is possible solely on the basis of the relativistic Schwarzschild solution of Einstein's equations.

Nevertheless, before we consider the utterly nonsensical Big Bang theory and other associated aberrations, we have to consider the dynamics of „classical black holes" in further detail.

THE DYNAMICS OF THE „CLASSICAL BLACK HOLE" AND THE RELATIVISTIC GRAVITATIONAL RED SHIFT EFFECT

We have already looked at the „black hole" phenomenon in great detail, but we will now examine this phenomenon even more painstakingly. To do so, we will work with practical examples of different masses that will give you a better understanding of the dynamics of the classical „black hole". We will consider, on a step by step basis, what would happen if one were to put an increasing mass „into a black hole" based on classical physics. Repeated here is the Schwarzschild radius equation that is used for determining the classical Schwarzschild radius (you must not confuse this equation with the *relativistic Schwarzschild solution*):

$$r_s = 2\frac{GM}{c^2}$$

When we enter the mass of **0.000021765… grams** (*Planck mass*) into the above equation, the result is half the Planck length.

$$\frac{2Gm_P}{c^2} = \frac{l_p}{2}$$

„l_p" stands for the Planck length (theoretically smallest possible length), „G" stands for the gravitational constant, „m_p" stands for the smallest theoretical mass that is in theory able to create the smallest theoretically allowed „black hole" with a „diameter" of the Planck length; „c" stands for the speed of light.

As can be seen, the result is a bit of an idiosyncrasy, namely half the *Planck length*. At first glance, it appears impossible because the *Planck length* is theoretically the smallest possible indivisible length. However, it is the diameter that is decisive and not the radius. Thus, the theoretically smallest possible diameter of a „black hole" is the *Planck*

length. This theoretically smallest possible „black hole" is called *Micro Black Hole (MBH)*. It has the maximum theoretically possible density (*Planck density*), the highest theoretically possible temperature (*Planck temperature*) and the highest theoretically possible pressure (*Planck pressure*) in the smallest theoretically possible volume (*Planck volume*). Next, we shall enter another extreme value into the above Schwarzschild equation. Which result can we expect when we replace „r_s" with the currently assumed radius of the universe, namely *13.7 billion light years*? The resulting mass is about *8.7 · 10 ^{52}kg*. **This value corresponds with the currently accepted estimated mass of our universe!** The result begs the question: on which basis did the cosmologists estimate the mass of our universe? It is not a coincidence that the accepted estimate of the mass of the universe corresponds with the value obtained, when we enter the radius of *13.7 billion light years* into the Schwarzschild radius equation.

Let us determine the *mean density* of a „black hole" with a Schwarzschild radius of 13.7 billion light years and a mass of 8.7 · 10 ^{52}kg. It may be hard to believe, but the mean density corresponds to a density of about half a dozen hydrogen atoms per cubic meter. This, in turn, corresponds with an almost perfect vacuum and represents the currently estimated mean density of our universe. Our universe is almost a perfect vacuum but inspite of this fact it actually can be a „black hole" or to say it more precise, a *black sphere*. Amazing, isn´t it? Let us make another calculation. Assuming, for example, that the average mass of a star in the universe is about ten times the solar mass ($2 \cdot 10^{31}$ kg), then the universe would, on the basis of the determined mass of $8.7 \cdot 10^{52}$kg, consist of roughly $5 \cdot 10^{21}$ stars. Estimating that a galaxy contains an average of 50 billion stars, then the mass of $8.7 \cdot 10^{52}$kg is roughly equal to 100 billion galaxies. Our universe could very well be a „black hole", or rather a *black sphere* with a mass of 100 billion galaxies and a radius of 13.7 billion light years, yet, with a mean density that is almost the same as that of a perfect vacuum. Quite amazing, or? Of course, in countless documentaries it is argued that „black holes" will swallow almost anything while their mystical properties are constantly emphasised. In addition, it is constantly claimed that the laws of physics do not apply „inside black holes". However, let us continue with our considerations. Let us take, for example, the mass of a human being (mass about 80 kg). When we enter this mass into the

Schwarzschild radius equation, we obtain a Schwarzschild radius of = 1.18... · 10^{-25} meters.
Written in full:

0.000000000000000000000011865 meters.

The mean density of this human „black hole" would be:

$$\frac{M}{V} = \frac{3c^2}{8\pi G r_S^2} = 1{,}1434 \ldots 10^{76} \, kg m^{-3}$$

Written in full:

14340000000000000000000000000000000000000000000000000000000 0000000000000 kg/m³.

Compared to the theoretically densest black hole, the *Micro Black Hole (MBH)* this value equates to a number with 20 fewer zeros!

If the rather large mass of the earth was to collapse into the state of a „black hole", the value of the mean density would have 66 fewer zeros when compared with the mean density of a MBH. The mass of the Earth is approximately 5.972 ·10^{24} kg. This corresponds to a mean density of the earth, collapsed into the state of a „black hole", of 2.05... · 10^{30} kg.

2.050.000.000.000.000.000.000.000.000.000 Kilogramm/cubic meter

This value is much smaller than the value of the density of a MBH or a human being in the state of a „black hole". We continue the series while considering increasingly massive objects.

Entering the mass of the sun (2·10^{30} kg) into the equation, we obtain a mean density for the sun collapsed into the state of a „black hole", of 1.85 ... ·10^{19}kg/cubic meter - a further 11 less zeros:

18.500.000.000.000.000.000 Kilogramm/ cubicmeter

Now, we will plug in the mass of the „black hole" that is presumed to be at the centre of the Milky Way, about 4 million solar masses. This „black hole" has a mean density of $1.156...\cdot10^6$ kg/cubic meter:

1156000 kilograms / cubic meter

As we can see, the mean density of a „black hole" decreases enormously (exponentially) the more mass it „contains", and not vice versa!

At this point, we plug the mass of one of the most massive „black holes" into the Scharzschild radius equation. This „black hole" is located in the galaxy NGC 1277 and contains about 14 percent of the total mass of the galaxy. This corresponds to a whopping 14 billion solar masses! The mean density of this „black hole" is far less than the density of water! It has a mean density of about 0.1 kg /cubic meter:

100 grams / cubic meter.

This density corresponds to the mass of about one bar of chocolate per cubic meter. Even air under normal conditions (mean sea level) has a higher density (~1.2 kg/cubic meter). This „black hole" would even „float on milk", as it has a much lower mean density than water (the density of water is 1000 kg/cubic meter)! That is, of course, in reality not possible, because no such large bowl of milk exists and a „black hole" would, of course, „suck in" the bowl of milk. As we have already calculated, the mean density of our universe containing a mass of about 100 billion galaxies has a tiny mean density of half a dozen hydrogen atoms per cubic meter. This density equates closely to a perfect vacuum, accordingly, a „black hole" does not have to have a huge mean density, on the contrary, its mean density can almost equal the density of a vacuum! It just depends on the mass of the „black hole". According to *Isaac Newton*, masses attract each other. This attraction occurs with a specific force „F" that depends on the mass of the attracting objects (m_1, m_2) and their distance to each other (r). Furthermore the magnitude of the force can be derived by multiplying an attracted mass „m" by the acceleration value „g" of the attracting mass. This is described in *Newton´s gravitational law*:

$$F = G \frac{m_1 m_2}{r^2} = mg$$

Where „F" is the gravitational force, „m" the mass, „G" the gravitational constant, „g" the magnitude of the acceleration/deceleration (gravitational potential) and „r" the distance between the objects.

The gravitational force decreases inversely proportional in the square of the distance between the attracting masses, i.e. exponentially (r^2). For example, our earth has a specific *acceleration/deceleration* value of about *9.81 m/s²*. Someone standing on the earth's surface is accelerated/decelerated by the mass of the earth, hence, a person with a mass of 80 kg is attracted with a force equal to 80 kg multiplied by the earth´s acceleration value (~10m/s²) which equals 800 N (Newton). This force keeps you on the ground. It is called the gravitational force or weight force. In everyday language we are used to saying that one weighs, for example, 80 kg. However, this is physically incorrect. You should say that you are attracted by a weight force of 800 N. The acceleration/deceleration on Earth is expressed as „g". It is said that an object on Earth is accelerated/decelerated by „1g". The moon has an acceleration/deceleration value of one sixth the acceleration value at the earth´s surface (1/6 *g*). Therefore, astronauts can, in spite of their own mass, which is combined with a very heavy spacesuit, easily jump around on the moon. They are attracted by a much lower weight force than on Earth. The weight force is calculated by multiplying the mass of an object by the acceleration/deceleration value of another attracting object. The same mass of an object on the surface of the moon weighs much less than on Earth. A fully kitted-out astronaut on the moon had a mass of about 180 kg but the weight force on the moon was just 300 N - in everyday language one would say the astronaut's weight was „30 kg". If a fighter pilot executes a steep turn with his jet, he is exposed to an acceleration that can press the fighter pilot into his seat with an acceleration of more than 8 g. Thus, he is pressed into his seat with more than 8 times the corresponding weight force of his body on Earth. Imagine that you are shooting a bullet vertically into the sky. The speed of the bullet gradually decreases (deceleration) due to the gravitational potential

of the earth and the bullet would eventually fall back to the ground (acceleration). Acceleration/deceleration means the capability of a mass to attract another mass. The potential of a mass to attract another mass is called the gravitational potential. The larger the amount of acceleration/ deceleration, the larger the gravitational potential is and vice versa. When something is influenced by a gravitational potential, it can be accelerated or decelerated. Since the universe contains a defined mass and has a fixed extent, we can, according to Newton, derive the gravitational potential of the universe, thus, the potential to gravitationally influence objects moving through the universe. Objects which are moving through the universe are decelerated by the gravitational potential of the universe. You would certainly tend to assume that the universe with its huge mass has an equally huge gravitational potential. Quite the contrary! With help of Newton´s law of gravitation we are indeed able to determine the gravitational potential of the universe on the basis of the estimated mass of the universe ($8.7...\cdot10^{52}$ kg) and an assumed radius of 13.7 billion light years. The result is a much lower deceleration magnitude than on earth:

$$g_U = \frac{GM_U}{r_{SU}^2} = 3.472\ ...10^{-10}\,ms^{-2}$$

(where „g_U" is the deceleration value of our universe, „G" is the gravitational constant, „M_U" is the estimated mass of the universe and „r_{SU}" is the assumed radius of the universe of 13.7 billion light years)

Once again, this universal gravitational deceleration value corresponds to the gravitational potential of our universe on the basis of estimated and assumed values and has absolutely nothing in common with an accelerated expansion of the universe. The resulting g-value of the universe on the basis of the assumed values is according the above equation:

0,0000000003472 m/s².

Compared to the g-value on earth, the „*universal g-value*" is vanishingly low. We remember that the g-value on the earth is *9.81 m/s²*. **The earth´s g-value is approximately 28 billion times larger than the g-value of the**

universe! This is due to the fact, that the mass of the universe, although incomparably larger than the mass of the earth, is spread over the whole space of the universe. In spite of this, the universe has the dynamics of a „black hole" (or more accurately a *black sphere*) a fact which is not recognized by most astronomers (with just a few laudable exceptions) and which is the reason for erroneous assumptions such as the Big Bang. Although the g-value of the universe, i.e. the gravitational potential of the universe, is extremely tiny, the deceleration of an object increases tremendously the longer this object travels through the universe. Of course, the universe´s deceleration has an effect on everything travelling through the universe and, of course, on light as well. At this point, it is revealed that the gravitational potential of the universe causes a relativistic gravitational red shift effect on photons.
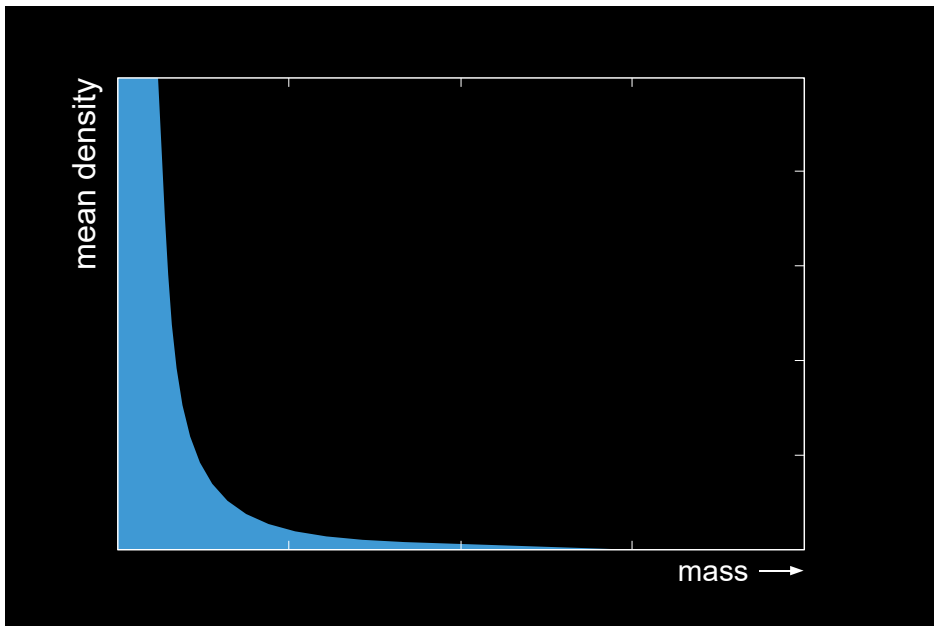

Fig. 44 | The mean density of a „black hole" decreases exponentially with incresaing mass.

The above graphic shows impressively the ratio between the mass of a „black hole" and its mean density. While the mass of a „black hole" increases, the mean density decreases exponentially (according to the following equation):

$$\frac{M}{V} = \rho = \frac{3c^6}{32\pi G^3 M^2}$$

The illustration above (Fig. 44) shows how remarkably fast the mean density of a „black hole" decreases, the more mass it „contains", with the mean density even tending towards zero the more massive a „black hole" is. A super-massive „black hole" can never have a mean density of zero but an extremely low mean density of almost zero and an extremely large extent. Thus, our universe does, in fact, have a very low mean density. „Black holes" are not always the monstrous beasts that they are portrayed to be. As one can see, „black holes" can be quite „cosy." You remember the already mentioned, currently largest known „black hole", located in the centre of *Galaxy NGC 1277*. It is assumed that it contains a mass of 14 billion solar masses. We have already calculated its mean density as having a value of about *100 grams/cubic meter* which is considerably lower than the density of water (*1000 kg/cubic meter*). Since we are inclined to imagine „black holes" as analogous to oversized, voracious, cosmic vacuum cleaners, we have now demonstrated that „black holes" can be extremely harmless. The resulting g-value of the „black hole" in the centre of NGC 1277, i.e. its ability to attract other bodies, is about *1083 m/s²* which is just about 110 times more than the g-value of the tiny earth (*9.8 m/s²*). This might sound like a lot, but one has to consider that this „black hole" contains 14 billion solar masses.

However, the huge mass is spread over a large volume (in the classical sense). Thus, this „black hole" has a relatively modest g-value of approximately *1100 m/s²*. The sun, for example, has a g-value of about *270 m/s²* on its surface. This in turn means, the huge „black hole" in the galaxy *NGC 1277* has just a 4-fold higher g-value than our sun and our sun is definitely not able to suck in a major part of our galaxy. That is quite modest for such a super-massive „black hole". Hence, we see that this monster has relatively small teeth. We can see that the classical „black holes", or more accurately, relativistic *black spheres,* that are shrouded in myth, are in fact quite normal and predictable phenomena of our universe.

Media reports promoted the idea, that it would soon be possible to create a „black hole" and simulate the Big Bang using the *Large Hadron Collider* in Geneva (particle accelerator). This notion spread panic amongst some

people. *(Herewith, the experts among you are informed, that this book does not address the string theory, since this „theory" is, just like the Big Bang theory, utter nonsense. The string theory is a pseudo-scientific attempt to substantiate the Big Bang theory and incorporate esoteric mysticism within science. It is a fudged figment of the imagination, based on absolutely nothing but complete nonsense. So-called „scientists" who want to spread this „theory" should be ashamed of themselves!)* The thesis behind being able to create a „black hole" in a Large Hadron Collider is not only boundlessly arrogant but equally nonsensical. You might ask why? Well, answering this question is very easy. The mass of a *Micro Black Hole* (as we know the theoretically smallest „black hole") is 0.000021765 ... grams. If we were to try to create such a „MBH", we would need, in accordance with Einstein´s famous equation $E = mc^2$, an amount of energy equal to *$1.96...\cdot10^9$ joules*. This result corresponds to *$1.22 ...\cdot10^{16}$ tera electron volts*. Written in full:

12.200.000.000.000.000 Teraelektronenvolt

What do you think is the capability of the LHC in Geneva? Just 14 – 1400 tera electron volts, depending on whether it is single protons or lead atoms that are being fired at each other. Compared with our calculated value of *12200000000000000 tera* electron volt the capability of the LHC in Geneva is ridiculously puny. The energy of the LHC in Geneva is about 10000 billion times lower than required energy to create even the theoretically smallest possible „black hole". By the way, instilling fear into the people is a powerful yet evil tool. It leads to panic among the people who put their trust in scientists. One must not forget, that several hundred of millions of people pay the wages of the scientists and the costs required in order to build extremely expensive instruments and their recompense is, that the people are fed on nonsense that frightens them. Perhaps it is even intended to scare people because history has shown that instilling fear is always a very effective measure for influencing and manipulating people. A sound physicist would never get involved in such evil activities.
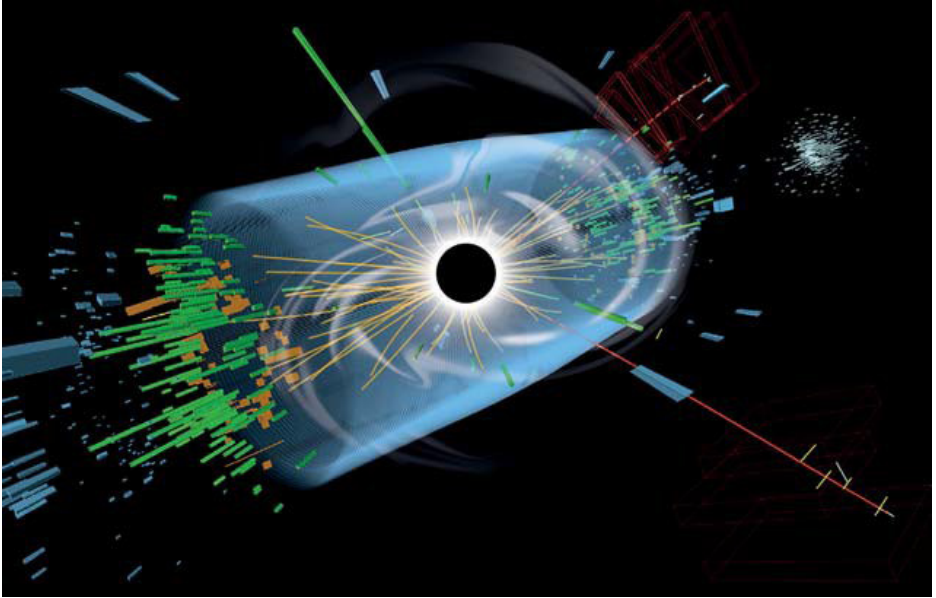
Fig. 45 | The creation of a „black hole" (*black sphere*) with help of the LHC in Geneva is absolutely impossible.

On Earth, we may dream of creating a MBH and, thus, trying to become a creator, perhaps even rivalling God, ridiculous!

However, a MBH would be the best candidate for forming a singularity, because it is theoretically impossible for a higher density to exist in a yet smaller space. But we already know that in our universe neither a singularity,in which solely the 3rd dimension (height) becomes zero, nor a singularity, in which all 3 spatial dimensions (height, breadth, length) become zero, can exist. The largest empirically based density in the universe is the density of the atomic nucleus.

Now you know a whole lot about „black holes" and *black spheres* which provides a good basis to once again return to talking about the previously mentioned *mass-space equivalence*. Therefore, we consider the following Schwarzschild radius equation once again:

$$r_s = 2\,\frac{G\,M}{c^2}$$

Let us examine this equation carefully. If we enter a mass of „0" kilogram into this Schwarzschild radius equation, then, of course, the result is a Schwarzschild radius of „0" meters. What does this imply? No mass, no radius, no volume, just nothing! That seems to be logical. If we plug in an increasing mass for „M" into the Schwarzschild radius equation, the corresponding Schwarzschild radius will increase and, thus, the corresponding classical Schwarzschild volume of the „black hole" becomes larger, increasing with the third power of the Schwarzschild radius. This seems to be logical as well. If we take, for example, the presumed mass of the universe of about $8.7 \cdot 10^{52}$ kg, then the universal „black hole" would have a radius of about 13.7 billion lightyears and a volume of $9.121...\cdot 10^{78}$ m^3. This is the volume of our universe. These calculations seem to be trivial but what is the core message of the above Schwarzschild equation? The answer can be found in the following section.

THE EQUIVALENCE OF MASS AND SPACE

The seemingly trivial considerations of the previous chapter hide a fundamental principle: mass generates space. **Without mass there is no space just as there is no space without mass. Mass and space are interdependent.** The Schwarzschild radius equation is nothing more than a mathematical definition of the *mass-space equivalence*. The seemingly trivial Schwarzschild radius equation has an profound significance, similar to the world famous equation $E = mc^2$, Einstein´s mathematical definition of the equivalence of mass and energy. The *mass-space-equivalence* can be derived easily. In order to do so we need only two equations, the Schwarzschild radius equation and the equation for calculating the volume of a sphere:

$$r_S = \frac{2GM}{c^2} \qquad V = \frac{4}{3}r^3\pi$$

The two equations result in the *mass-space equivalence* equation:

$$V = \frac{4}{3}\pi\left(\frac{2GM}{c^2}\right)^3$$

We can persist with the supposition that space and mass are independent of each other, however, it is a completely useless supposition. **Space and mass are interdependent. Thus, the extent of the universe does <u>not</u> depend on a kind of stable gravitational equilibrium or a kind of balance between the gravitational force of the total mass of the universe and a kind of counteracting force that keeps the universe stable, as even wrongly supposed by Einstein. The extent of the universe solely depends on its mass and not on the gravitation caused by this mass. This in turn means, that the energy density of the universe is <u>invariable</u>. The energy density of the universe is solely determined by its mass and by the space defined by this mass due to the principle of equivalence of mass and space.** This statement has never been postulated before, but it explains the dynamics of the universe itself. Only if one recognizes, that the universe is based on the dynamic of a *black sphere*, it will be possible to determine the mass and

the extent of the universe by means of the *Pioneer anomaly* (decelerating effect caused by the mass of the universe, thus, caused by the gravitational potential of the universe). In addition, we will learn, that distances between objects within our universe can be determined on the basis of the gravitational potential of the universe combined with the red shift of spectral lines. The baseless and nonsensical Hubble constant is not an option at all. In the course of this book, we will derive the following equation in order to determine the mass of the universe „ M_U " with the help of the *Pioneer anomaly* which we anticipate at this point:

$$M_U = \frac{c^4}{4G\,g_U}$$

Where „g_U" is the value of the pioneer anomaly (gravitational potential of the universe), „c" is the speed of light and „G" is the Gravitational Constant.

This equation allows us to calculate the volume of the universe on the basis of the gravitational potential of the universe g_U, which is the value of the Pioneer anomaly. If we substitute M_U in the equation $V = \frac{4}{3}\pi\left(\frac{2GM}{c^2}\right)^3$ for „M_U" from the equation $M = \frac{c^4}{4G\,g_U}$, then the result will be the equation for determining the volume of the universe on the basis of the gravitational potential of the universe, i.e., on the basis of the *Pioneer anomaly*.

$$V_U = \frac{\pi}{6}\,\frac{c^6}{g_U{}^3}$$

Summary :

The universe has a defined mass and, dependent on this defined mass, it has a defined space due to the equivalence of mass and space. The space of the universe is defined by its mass. An expansion of the universe is absolutely impossible. Mass, space and time are inextricably interdependent and must never be considered independently. They form a unit.
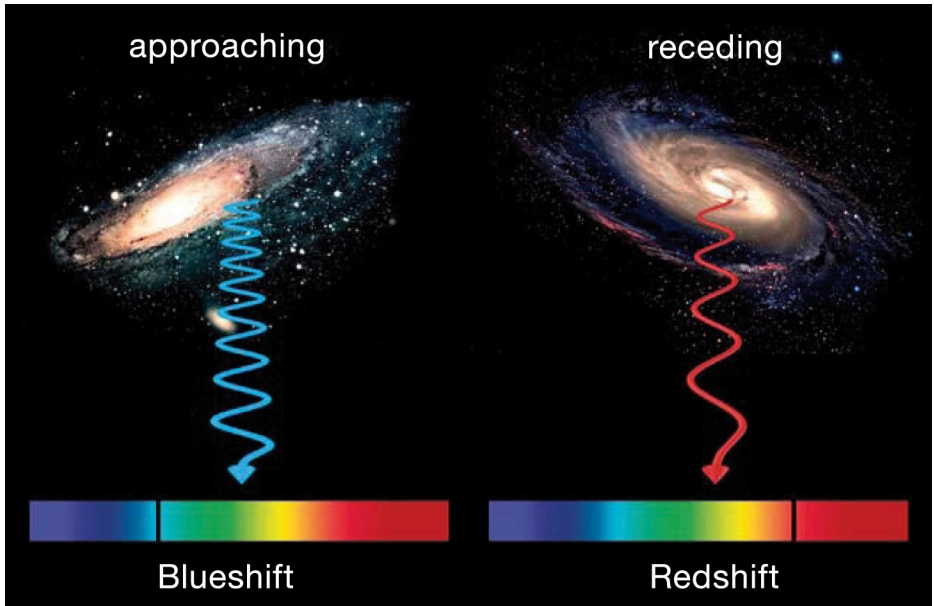
Fig. 46 | Shift of spektral lines by taking the example of an approaching galaxie and an receding galaxie on the basis of the Doppler effect.

THE PHENOMENON OF RED SHIFT IN THE UNIVERSE

There is no doubt that, due to the *Doppler effect*, the emitted light of moving objects seems to be red or blue shifted. The deeper we look into the space of the universe, however, the less relevant the Doppler effect becomes. The *relativistic gravitational red shift effect* is increasingly superimposed on the Doppler effect. This *relativistic gravitational red shift effect* is a phenomenon, that was described by Einstein as a result of his general theory of relativity. For example, if light is emitted by a mass, the light photons are exposed to the gravitational potential of this particular mass (see item 10, fig.72, appendix). Due to this fact the light photons are losing energy just as a bullet loses energy when it is shot into the sky and, subsequently, falls back down onto the surface of the earth. However, light photons cannot become slower. If light loses energy, the light waves extend; they are lengthened by the gravitational potential of the light emitting mass in accordance with the following equation:

$$E = \frac{h \cdot c}{\lambda} \Leftrightarrow \lambda = \frac{h \cdot c}{E}$$

(where „E" stands for the energy of the photon, „h" stands for the Planck's constant, „c" stands for the speed of light and „λ" stands for the wavelength)

Photons with less energy are long-wave and appear rather reddish to us. With increased energy, the photons become increasingly short-wave and appear bluish to us.
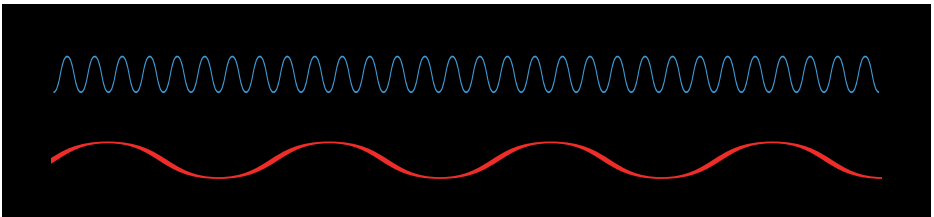
Fig. 47 | High frequency light waves appear bluish to us and low frequency light waves appear reddish to us.

The work, performed by the light to overcome the gravitational potential of a mass, results in a red shift of the light. Light is red-shifted due to gravity. Since the theory of general relativity describes this gravitational redshift effect, it is called the *effect of relativistic gravitational redshift*. We have already learned, that the universe has a gravitational potential, although a very, very weak gravitational potential of about **0.000000000874 m/s² (*Pioneer anomaly*)**, but over time it has an increasing influence on the light. Due to increased exposure of the light to the gravitational potential of the universe, the light becomes increasingly red-shifted. By a naive observer, this phenomenon can easily be misinterpreted as being caused by the Doppler effect. This particular misinterpretation is still maintained today by many cosmologists. This is a disaster and unambiguous proof of incompetence in the field of cosmology. It seems, that the key players in the field of cosmology actually do not understand relativistic effects and are trapped in a purely classical world view.

According to the Doppler effect, the emitted light of an object, moving towards an observer, becomes short-wave, thus, the light seems to be blue-shifted from the view point of an observer. When an object moves away from an observer, the emitted light of an object becomes long-wave, it seems to be red-shifted from the view point of an observer. This effect is analogous to the sound waves of a racing car approaching a spectator at high speed. The spectator hears a very high frequency engine noise (short-wavelength sound waves) if, for example, a Formula 1 racing car approaches at high speed. At the very moment when the racing car passes the spectator, the sound decreases and the engine noise drops to a lower-frequency (long-wavelength). So far, so good. The Doppler effect provides information regarding the movements of objects in relation to the observer. Galaxies which are located in our immediate „neighbourhood" mostly exhibit blue shifted spectral lines, which means that this galaxies are approaching us. For example, the *Andromeda Galaxy* and the *Milky Way* are approaching each other at a speed of about *400,000 km/hour*. That is the distance earth-moon travelled in one hour. In the distant future, this will lead to a „collision" (interpenetration) of the two galaxies. Do not worry, this will happen in about 3 billion years. The so-called „*Local Group*" (*the Local Group includes our Milky Way and its neighbouring galaxies*) is moving towards the so-called

Virgo Cluster, which consists of about 2000 galaxies. This cluster again moves towards the so-called *Great Attractor* (about 200 million light years away from us). This is not indicative of an expansion but rather a concentration within a vast area. In an expanding universe, everything would move apart. Looking deeper into the universe, we observe, that the spectral lines of the observed galaxies are exceptionless red shifted. How is it possible that complex agglomerations of galaxies within an area of about 200 million light-years are moving toward each other and toward a specific direction (Great Attractor) respectively? According to the Big Bang theory, everything expands and should move apart. This fact is well known, but it probably does not bother the vast majority of astrophysicists. It seems as if it is the first principle of so-called „modern astrophysics" to keep the Big Bang Theory alive by hook or by crook. All contradictions of the Big Bang theory must be ignored or rebuffed and the laws of physics twisted until everything fits again. What a really great spin on „science"! The Dark Age and the spectre of the Holy Roman Catholic Inquisition send their regards. The only question is: who are today´s inquisitors?

A distance of *200 million light years* is significant, meaning that we are not referring to a small portion of the universe that behaves atypically, contrary to the general trend of expansion of an assumed Big Bang universe. We know that masses attract each other. Of course, that is valid throughout the entire universe. But with increased distances of the observed celestial objects relative to us, we receive increased red-shifted light from objects far away from us. From this data, astrophysicists conclude brilliantly, that all far-off galaxies move away from us. This in turn means, that the tendency to concentrate or agglomerate obviously does not apply to the whole universe. This is a paradox that is not explicable on the basis of the Big Bang model. It can only be explained by the fact, that the observed relativistic gravitational redshift replaces the classical Doppler effect the further we look into the universe, or the longer the light is exposed to the gravitational potential of the universe. The Doppler effect finally becomes irrelevant.
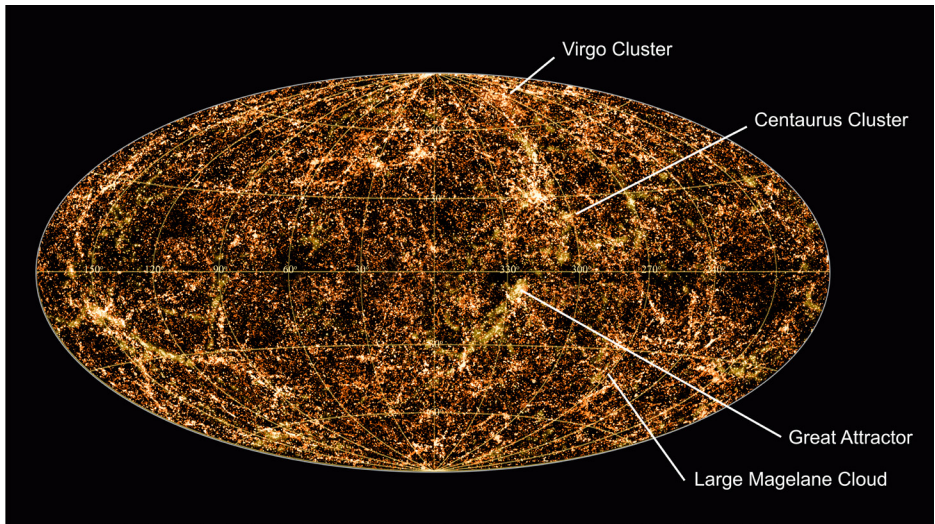
Fig. 48 | The so-called *lokale group*, including our Milgy way, is moving towars the *Virgo-Cluster*, which itself is moving towars the so-called *great attractor*.

We are living in a relativistic universe with a very specific gravitational potential and, thus, we have to interpret the observed phenomena in a relativistic way and not solely from the classical point of view. However, this happened in the last century and the classical point of view is still applied nowadays, because the theory of relativity has not yet reached the brains of most astronomers for which there is no excuse. Hubble was an old school astronomer. Bearing that in mind, you can understand his superficial, classical interpretation of the observed red shift and his conclusion that the universe is expanding. From the classical point of view, this seems to be the only logical conclusion, however, a wrong conclusion. Later on Hubble realised his mistake and spoke against his classical conclusion and against the Big Bang theory. Even nowadays Edwin Hubble is highly regarded as one of the „fathers" of the Big Bang theory, although he was a decisive opponent of the Big Bang theory. This fact, of course, is concealed by the Big Bang proponents. It is hard to believe that Einstein did not recognize that the observed red shift of the light of far-off galaxies is a result of his general theory of relativity. In fact, Einstein postulated, with the introduction of the *cosmological constant*, that the universe does not expand. In 1915, Einstein published his famous field equation including his cosmological constant and postulated that the universe does not expand (steady-state

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universe). In the course of this book, we solve the riddle of Einstein's field equation but what is more, we also empirically determine the value of the cosmological constant on the basis of the Pioneer anomaly. Thus, it is hard to believe that Einstein gave the questionable Big Bang theory priority over his deepest conviction that the universe has a firmly defined mass, resulting in a firmly defined space and a firmly defined immutable extent. Against this background, it is impossible that Einstein could have warmed to an extremely stupid Big Bang theory that would mean throwing his own ideas of a stable, static universe with a firmly defined extent overboard or rather throwing physical laws overboard. The true reason for Einstein's sudden passive „acceptance" of the Big Bang theory is probably buried forever but could be found in the global political situation of those days. As already mentioned, Einstein's visit to the USA, together with the Catholic priest Lemaitre in December 1932, was well planned to introduce Lemaitre into academic society and the convenient time of the journey was not randomly chosen. It was not an ordinary trip to the USA. Einstein never returned to Germany during his lifetime, because Adolf Hitler had assumed political power in Germany in January 1933. One must bear in mind that the power and influence of the Catholic Church at those times may not be underestimated. The influence of the Catholic Church might have been very supportive in helping Einstein to find a secure asylum in the USA. We must not forget that Einstein was a German Jew, a fact that was synonymous with a death warrant. Imagine Einstein's pervasive desperation and fear. The wonderful time of international scientific cooperation, which had found a perfect centre in central Europe, especially in Germany, was over and, thus, the spirit of enlightenment gave way to a disastrous dictatorship whose shameful consequences we all know. At this time of history, Einstein really needed help and fortunately he received the help he needed. He secured asylum in the USA as many other top-physicists. This help, however, cames at a price.

Nowadays, we can only speculate, but the fact, that the deception of a Big Bang theory and an expanding universe is still propagated today is pitiful. The fact that the universe cannot expand will be explicitly demonstrated in the course of this book. It is reality: a universe with a quantifiable mass has a defined extent and cannot expand or contract. This is the

real profound resulting statement of both, the Schwarzschild equation and Einstein´s field equation. Therefore, a Big Bang theory, derived from the interpretation of redshift based on the Doppler effect, is pure nonsense from the viewpoint of relativistic physics. It is inexcusable that the majority of astrophysicists either actively or passively support the theory of the Big Bang. One should remove all of the teaching licenses of all physicists who continue to support the Big Bang theory, so that they cannot teach the next generation the esoteric nonsense of a Big Bang and the esoteric nonsense of classical „black holes". Just recently the nonsense of the Big Bang was honoured with a Noble Prize - over 80 years after its initial proposal. Some „top-cosmologists" had proclaimed that they successfully „readout" gravitational waves of the characteristics of background radiation, allegedly caused by the Big Bang. This is really unbelievable and is evidence of the complete incapacity of the so-called „modern cosmologists". With the proposal of these gravitational waves supposedly derived from the Big Bang - a kind of echo of the Big Bang - the Big Bang prophets have now shot themselves in their own foot and removed themselves from the picture. They are probably not even aware that they themselves have hammered the last nail into the rotten wood of their own coffin.

THE EQUATION FOR DETERMINING DISTANCES IN THE UNIVERSE

Now we derive the equation for determining distances in the universe relative to us, on the basis of the *relativistic gravitational red shift* and the *Planck equation*. When a photon(15) travels through the universe, it performs work to overcome the gravitational potential of the universe. Thus, a light photon is increasingly losing energy, the longer it travels through the universe.
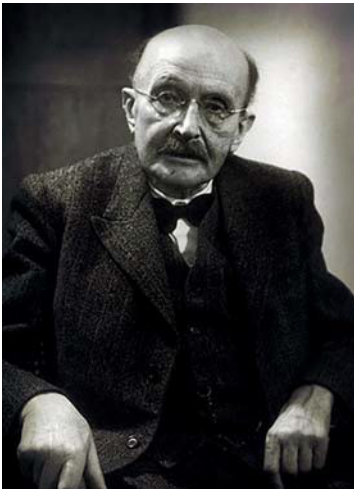
Fig. 49 | Max Planck

While increasingly losing energy, the photon of light does not become slower, but it´s frequency „f" reduces according to the equation:

$$E = hf = h\,\frac{c}{\lambda}$$

(Where „E" stands for the energy of a photon of light, „h" stands for Planck's constant, „f" stands for the frequency of the photon, „λ" is the wavelength of the photon and „c" is the speed of light)

A photon or quantum of light, which is exposed to the gravitational potential of the universe, performs work „W" as it travels through the universe:

$$W = Fs = mgD$$

„W" stands for the work carried out, „F" stands for the gravitational force of the universe, „s" is the distance covered by the photon, „m" is the dynamic mass of the photon, „g" is the gravitational potential of the universe and „D" is the distance over which the photon was subject to the gravitational potential of the universe.

This work carried out corresponds to a loss of energy of the photon according to the equation:

$$\Delta E = h\left(f_e - f_r\right)$$

f_e, *emitted frequency of the photon at the beginning of its travel through the universe*

f_r, *received frequency of the photon after its travel through the universe.*

The mass of a photon in rest is of course „0". As already mentioned, a moving photon (it always moves with the speed of light) contains a specific amount of energy (quantum), according to the following equation:

$$E = hf$$

According to Einstein's equation $E = mc^2$, this energy quantum has an equivalent mass, the so-called *dynamic mass of a photon*.

$$m_{dyn\,\gamma} = \frac{hf}{c^2}$$

The energy loss „ΔE" of a photon, while traveling through the universe's gravitational potential, corresponds to the performed work „W".

$\Delta E = W$ results in the following equation:

$$ W \; = \; Fs \; = \; m_{dyn\,\gamma}\, g_U \mathsf{D} $$

From this follows:

$$ h(f_e - f_r) \; = \; m_{dyn\,\gamma}\, g_U \mathsf{D} $$

When we substitute „g_u" with:

$$ g_U \; = \; \frac{GM_U}{r_{SU}{}^2} $$

and f_r ; f_e with:

$$ f \; = \; \frac{c}{\lambda} $$

it follows:

$$ \frac{r_{sU}^2\, c^2}{GM_U} \left(1 - \frac{\lambda_e}{\lambda_r} \right) = D $$

Equation to determine the distance of objects in the universe relative to us, on the basis of the mass, the Schwarzschild radius of the universe and the observed redshift.

r_{SU} = Schwarzschild radius of the universe
G = gravitational constant
c = speed of light
D = distance of the object relative to the observer
M_U = mass of the universe
λ_e = emitted wavelength of the observed object
λ_r = received wavelength of the observed object

The term $\dfrac{r_{su}^2\, c^2}{GM_U}$ defines the *diameter of the universe*. We know that the Schwarzschild radius „r_{su}" of the universe (which is half the diameter of the universe) is defined by the equation:

$$r_{SU} = \frac{2GM_U}{c^2}$$

Thus, the term $\dfrac{r_{SU}^2 c^2}{GM_U}$ can be expressed in the following way:

$$\frac{4GM_U}{c^2}$$

This term defines double the Schwarzschild radius of the universe, thus, the diameter of the universe. This in turn allows us to deduce the equation to determine distances in the universe in the following way:

$$\frac{4GM_U}{c^2}\left(1 - \frac{\lambda_e}{\lambda_r}\right) = D$$

Equation for determining the distances of objects in the universe relative to us, on the basis of the mass of the universe M_U and the observed redshift λ_e / λ_r.

However, at this point, we anticipate an equation for determining the mass of the universe „M_U" by means of the gravitational potential, which we will derive in a later chapter. We will see that the equation for determining the distances in the universe can also be defined as a function of the *Pioneer anomaly* „g_U" (gravitational potential of the

universe). This is possible with help of this function:

$$M_U = \frac{c^4}{4G\,g_U}$$

Finally we arrive at the following equation:

$$D = \frac{c^2}{g_U}\left(1 - \frac{\lambda_e}{\lambda_r}\right)$$

Equation for determining distances of objects in the universe, relative to our position, on the basis of the Pioneer anomaly „g_u" (gravitational potential of the universe) and the observed redshift. **The term „c^2/g_u" corresponds to the diameter of the universe which will be explained later on.**

The derivation of this equation is explained in the chapter:

„Determination of the mass of the universe by means of Pioneer-Anomaly"

The magnitude of the redshift, which is, according to the above equation, defined by the term „λ_r/λ_e", can also be defined as a function of „z" (redshift factor).

$$z = \frac{\lambda_r}{\lambda_e} - 1$$

From this it follows:

$$\left(1 - \frac{\lambda_e}{\lambda_r}\right) \triangleq \left(1 - \frac{1}{z+1}\right)$$

Thus, we can express the equation for determining distances in the universe in relation to our position as a function of z:

$$D = \frac{c^2}{g_U}\left(1 - \frac{1}{z+1}\right)$$

De facto we do not know the actual diameter of the universe, because we do not know the actual mass of the universe. **However, there is indeed an amazing possibility for determining the mass of the universe empirically, thus, we will be able to determine the actual diameter of the universe. This is possible by means of the *Pioneer anomaly (g_U)* of which more later.** We now know, that the relevance of the *Doppler effect* decreases significantly with increasing distance of objects relative to us. This <u>decrease</u> of relevance occurs exponentially, however, the relevance of the *relativistic gravitational redshift effect* <u>increases</u> and becomes finally more relevant (exponentially). Thus, considering only the Doppler effect as a basis for interpreting the redshift of the spectral lines of galaxies in the universe is extremely simplistic and leads to stupid Big Bang theories.

THE TEMPERATURE OF THE UNIVERSE

We now need to explain the difference between a *classical change of space* (*change of volume)* and a *relativistic space distortion* (*no change of volume*).

Relativistic space distortion is not based on a quantitative change of space, ie. volume, but on the relativistic effect that an external observer notices a change of space, depending on the relative speed of the observed system as seen by the observer or depending on the influence of a massive object. What does this mean? In the following illustration, we can see that the astronaut and the space in which he is located (box) are changing in a *relativistic way*, thus, the astronaut does not recognize any change in his state or any change in the state of the space in which he is located. The volume of the „box" actually doesn´t change. The change of space is an apparent change, thus, there is no actual change in terms of quantity. The astronaut located within the „box", does not notice any change within the „box". Only an observer external to the system „*astronaut within a box*" perceives a change. This is what is meant by the term *relativistic space distortion*. The effect is a consequence of Einstein´s theory of relativity and is called relativistic distortion of space, resulting from an actual or real change of speed or from the influence of a massive object.
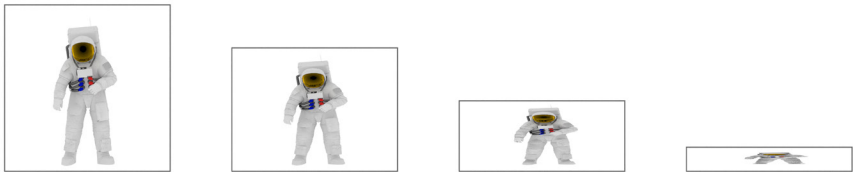
Fig. 50 | Astronaut and space apparently change from the view point of an external observer (relativistic effect). The astronaut does not notice any change.

The situation is different if the space (volume) changes quantitatively in a so-called "classical way" (fig. 51). While the volume of the box is increasing, the size of the astronaut remains unchanged. Thus, the volume of the „box" in which the astronaut is located increases, but the astronaut does not. This is what is meant by a classical change of space (actual change of volume).
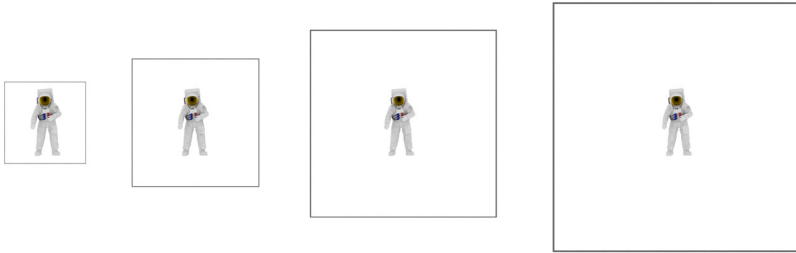
Fig. 51 | Astronaut within a classically increasing space. The astronaut notices, that the box is becoming larger. The volume of the box changes quantitatively.

According to the Big Bang theory, the temperature of the expanding universe decreases, as wrongly supposed by the cosmologists. This naive interpretation is solely based on classical physics. However, it is not an interpretation that holds true in our universe.

For a better understanding of this topic, we will consider a very limited space in which we can neglect relativistic effects. Let us imagine a closed system, for example a cube of one cubic meter, containing a gas that homogeneously fills the space of the cube. Let us additionally suppose, that the gas inside the cube is at normal room temperature. If we compress the gas by pushing one side of the cube inwards, then the pressure and the temperature of the gas inside the cube increase while the volume of the cube decreases, since the kinetic energy of the gas is distributed over a smaller volume (the so-called *energy density E / V* increases). The pressure „p" increases, while the volume „V" decreases, so the temperature „T" increases. Similarly, an increasing temperature can be observed in an air pump that becomes hot as a result of its pumping. What have we done? We have just concentrated the energy of the gas by reducing the volume of the cube, thus, we have increased the *energy density*. If we were to allow the gas to expand by enlarging the volume, the pressure would decrease and the gas would cool down again because the energy of the gas is distributed over a larger space (volume), thus, the *energy density* decreases. According to the Big Bang theory, the entire energy of the universe was concentrated in an extremely small volume (*Planck volume*) with a corresponding extremely high temperature (*Planck temperature*) and pressure (*Planck pressure*). While the universe expanded and is still

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in progress of expansion, it gradually cooled down (according to the wrong statements of the cosmologists), because the space of the universe is expanding. Thus, the volume of the universe is increasing and the energy of the universe is spread over a larger volume (*decreasing energy density*). That is exactly the snag! The universe is a closed system. A closed system can never change its state the way that the volume, i.e. the space of this closed system changes in terms of quantity. This means, that the volume of the closed system universe may not at all change. Otherwise, the universe would constantly generate new space out of nothing. That is pure nonsense and violates the *law of energy conservation*. A temperature decrease of a hypothetically expanding universe could only occur if the universe were to „produce" space continuously, i.e. volume. But, this is most certainly not the case because this would defy the laws of physics. This means, that the observed physical effects of real gas, in terms of pressure, temperature and volume, is not applicable to the universe. To compare an alleged change of temperature of an allegedly expanding universe with a change of temperature of real gas within an increasing volume is nonsensical. Fellow astrophysicists, allow me to ask, what is wrong with you? Are you fully aware of the implications of your support of the Big Bang model? What goes through your head when you are standing in front of your students, teaching them nonsense? To improve our understanding, let us consider the topic again.

Inflating a balloon, the contained volume of the balloon increases within the space the balloon is located in, thus, we can observe that the baloon gets larger. This is easy to understand. If the space itself inflated - as postulated by the Big Bang theory - the volume would not increase and everything, even the atoms, inside this inflating space would increase in size. This means, that an observer inside an inflating space would not recognise that a change of space (volume) was taking place. A change of space would only be recognisable to an „outside" observer as is depicted in figure 50. This concept is difficult to grasp, is it not? Based on the following illustration we will discuss this phenomenon in more detail.

0c

0.866c

0.995c

0.99995c
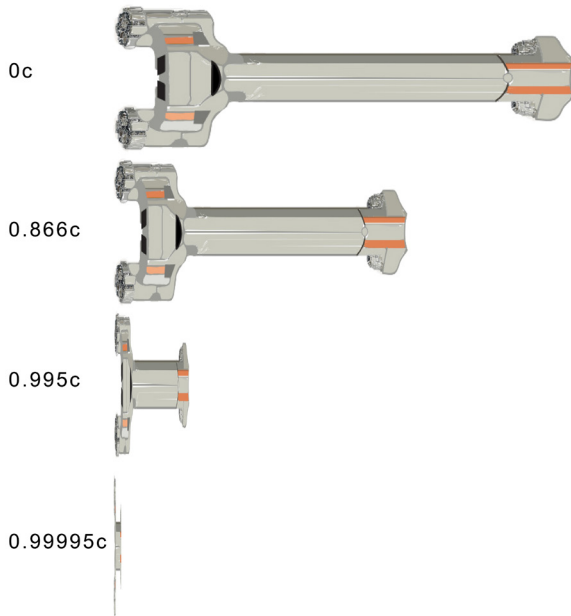
Fig. 52 | A spacecraft seems to shorten in direction of flight, the more it approaches the speed of light relative to a stationary external observer at rest. The crew located within the spacecraft does not notice this. From the point of view of the crew members, nothing changes. The same phenomenon can be seen by an external observer watching a spacecraft as it approaches a *black sphere*. For the crew members inside the spaceship nothing changes, while to the external observer the spaceship appears to become increasingly flat the closer it comes to the *black sphere*. A quantitative reduction of the space does not take place.

For a better understanding, we imagine an external observer at rest, observing a spacecraft which is accelerating to almost the speed of light and, then, decelerating again to a velocity of zero relative to the observer. This process can be interpreted in two different ways. Imagine you are an external observer and both, you and the spacecraft, are at rest at the start of the mission. If the spacecraft gradually accelerates relatively to you, then you will perceive, while observing the accelerating spacecraft, that it begins to shrink as it nears the speed of light. It appears increasingly short. If it were possible to weigh the spacecraft with a notional scale, it would also be apparent that the spacecraft was becoming increasingly heavy, because its mass would increase as it neared the speed of light. The energy required to accelerate the spacecraft has - according to Einstein's

equation $E = mc^2$ - an equivalent mass. The mass of the spacecraft increases, while the spacecraft is accelerating to the speed of light; the mass of the spacecraft would eventually become infinite if the speed of light could actually be reached. However, this is quite impossible, because that would mean that the spacecraft could escape from the universe, which is a closed system, something that is not permitted by the laws of physics. An object with a rest mass cannot reach the speed of light (photons, for example, do not have a rest mass, therefore, light can (and has to) move with the speed of light). The energy of the entire universe would not be sufficient in order to allow a mass to accelerate to the speed of light, thus, to escape from the universe. An accelerating mass is never allowed to actually reach the speed of light. Increased speed of a body causes increased mass of the body, consequently, increased energy is needed for further acceleration. An observer at rest would observe three specific facts during the acceleration of an observed spacecraft to almost the speed of light: a contraction in the length of the spacecraft, an increase in the mass of the spacecraft and time dilatation inside the spacecraft. However, contrary to the observer at rest, the crew members inside the spacecraft do not notice any change. The scales on-board do not indicate an increase in weight, the watches of the crew members tick constantly and the space within the spacecraft does not shrink. The walls in front of the crew, i.e. the walls located in the direction of flight, do not change their colour from bluish to reddish, depending on the acceleration or the deceleration of the spacecraft and the walls do not move towards or away from the crew, depending on whether the spacecraft is being accelerated or decelerated. The crew is not crushed by the walls located in the direction of flight and the ambient temperature does not change, because the walls in the direction of flight do not compress the space, i.e. the volume inside the spacecraft. The crew located inside the moving, closed-system „spacecraft" does not perceive any change!

What is described here is a consequence of Einstein's theory of relativity. This consequence can be applied to a hypothetically expanding universe. Even if it were true that our universe was consistently expanding (of course we will see that the universe does not expand), then, it would not be perceptible to anybody located inside the purportedly expanding system „universe": no Doppler effect, no cooling, no change of any state.

Supporting the idea of a Big Bang is in many respects utter nonsense and has absolutely nothing in common with sound science but rather with dubious esotericism or pure dilettantism. Nevertheless, this nonsense is still taught to young students of astrophysics, along with the idiotic alleged discovery of gravitational waves, originating from a fictional Big Bang. Unbelievable! If you are a sound physicist, then you have to admit, that teaching young students about the nonsensical Big Bang is comparable to teaching them that Santa Claus and his little helpers really do exist.

There can be no doubt, the Big Bang model is a mistake, because it compares a classical experience within a closed system – for example, the explosion of a bomb within a defined space – with the inflation of the space itself. Of course, the explosion of a bomb in a defined space starts with a very hot explosion centre, followed by the spread of the explosion debris and a subsequent cooling. There is no doubt that the debris of the exploded bomb scatter at high speed. However, the scattering debris will never move faster and faster. A bomb explosion behaves according to the physical law of *increasing entropy* after the bomb has been ignited. Namely, everything tends towards a low energy state. This is described by *classical thermodynamics*. However, it is postulated that after the Big Bang, space itself started to expand (superluminally!) and under these circumstances, no one would be able to notice a change of state within this closed and expanding space-time system, called the universe. Thus, a decrease in temperate within the clearly defined space of the universe could surely never be observed. The assumption of an expanding and cooling universe is painfully naive and the same applies to the whole Big Bang theory. It is not necessary to be a professor to understand this. Even a pupil is able to understand this logical conclusion.

A certain Mr. Gamow and his colleagues derived a residual temperature of the Big Bang based on classical physics. The resulting values were up to 20 times higher than the value of the detected background radiation, which does not result from a cooling, expanding universe., as wrongly assumed. A search for this residual temperature of an alleged Big Bang, calculated by Gamow and his colleagues, was undertaken, but alas, nothing was found in the expected wavelength range. Thene, Mr.

Penzias and Mr. Wilson detected accidentally a background radiation in another wavelength range. Promptly this radiation was considered to be proof of the Big Bang, resulting in a Nobel Prize for Mr. Penzias and Mr. Wilson. Later on, one came to the conclusion, that in the case of a Big Bang - and a subsequent expansion -, the residual temperature of the alleged Big Bang should be almost zero Kelvin. Thus, one simply created (not only due to this reason) the nonsensical theory of cosmical inflation (see item 2, appendix), a cheap trick in order to explain the detected value of the background radiation. This is clever, is it not? Nevertheless, it is actually extremely important that Penzias and Wilson found the background radiation, because this, ironically, enables us to prove that there never happened a Big Bang. Indeed, the background radiation allows us to research the ancient state of the universe, but in a way completely different to that expected. Thus, the awarded Nobel Price for Penzias and Wilson is fair, which does not apply to some of the Nobel Prizes awarded in astrophysics. In the course of this book, we will recognise the central role of the background radiation in understanding the dynamics of our universe. With the help of background radiation and the laws of physics, we are able to extend our knowledge of the universe tremendously. Clinging on to a completely absurd Big Bang theory is inevitably doomed to fail. It has been found that the imaginary gravitational waves caused by a pseudo Big Bang are madness. However, their proposal will accelerate significantly the abortion of the Big Bang theory. It is painfully obvious, that some esoteric „cosmologists" seem to be lousy cheaters. The Big Bang proponents have certainly overstepped their mark.
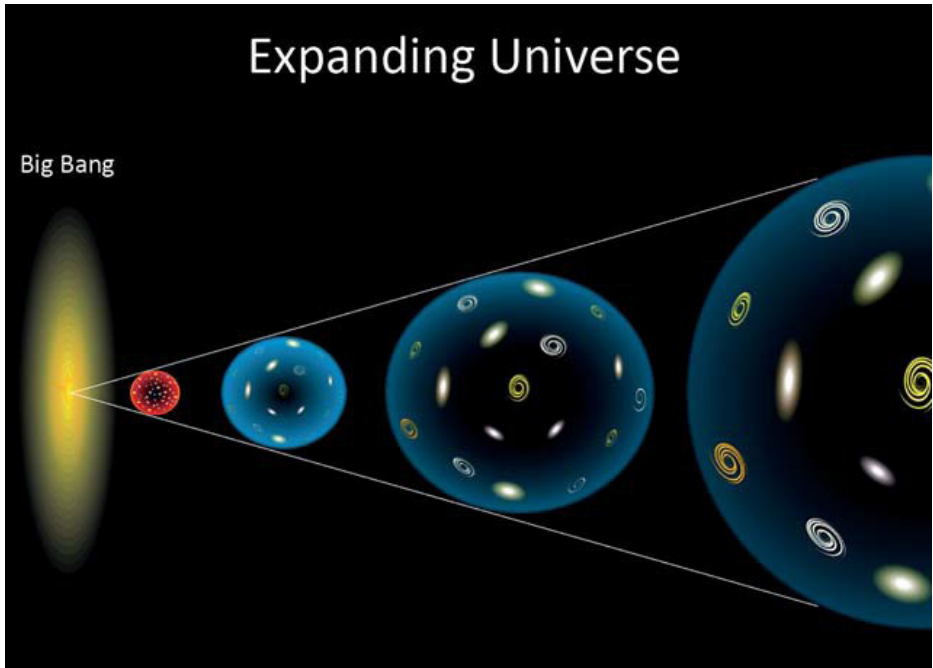
Fig. 53 | Illustration of Big Bang and subsequent expansion.

In the illustration above, the flaw in the Big Bang theory can be seen clearly, although, this was certainly not the intention of the illustrator. One can see very clearly, that the scale in an assumed to be expanding space does not change. The depicted galaxies are, so to speak, expanding with space itself. Everything expands with space, even the atoms. That means that the scale inside the space does not change while the space itself expands without increasing volume. However, the universe does not expand. This has to be pointed out again. **Our universe has a clearly defined mass and a clearly defined space and both, mass and space, may never be considered independently of each other, because mass and space are equivalent.** We have to consider this fact in the same way as we consider an electromagnetic wave. A magnetic wave can never be considered independently of an electrical wave. An expansion or contraction of space or a change of the volume of the universe is impossible. There cannot be any doubt about this matter. This statement is not an argument or a theory but simply a provable fact.

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Whether there has once been a beginning of the universe, is beyond our knowledge. We can´t even speak of a beginning, because the term „beginning" is not valid in relation to our universe. Time is a dimension within our universe but the universe itself can not be measured in form of a time-depending course. Thus, the question, whether the universe once began does not make any sense, in the same way as it is nonsensical to ask: what was first, the egg or the chicken? If in eons of years, the entire mass of the universe was to be agglomerated to a single gigantic object due to mutual gravitational attraction, the spatial extent, which is the volume of the universe, would not change! Whether the mass of the universe is either homogeneously or inhomogeneously distributed or even agglomerated in form of one single object, it does not make a difference, the extent, i.e., the „size" of the universe never changes, according to the equation of the *mass-space equivalence* $V = \frac{4}{3}\pi\left(\frac{2GM}{c^2}\right)^3$. The agglomoration of the entire mass of the universe is impossible due to the fact that a growing mass finally forms a black sphere. The larger a black sphere the more the capability to attract mass decreases exponentially.

However, the space (volume) of the universe can neither agglomerate, nor shrink, nor expand. The space of our universe is without a doubt defined by the mass of the universe. This is the solution to most of the problems in cosmology. The misconception of a Big Bang is simply wrong and naive. This stupid concept prevents understanding of the essence of the universe. It is extremely odd that the interdependence of mass and space has not yet been recognised. In spite of the simplicity of the Schwarzschild radius equation, the central message of which is very profound. What, and if something is beyond space, cannot be determined, however, we can assume a 5th dimension which is simply a lack of space, time and mass. The postulation of a 5th dimension is mathematically necessary in order to explain the state and the „form" of the universe and in order to understand the „rules" and the effects of the universe. The acceptance of a 5th dimension allows us to explain the essence of background radiation. If we do not mentally adapt our point of view to accept a 5th dimension in order to „observe" the universe notionally from the „outside", we cannot progress in the field

of cosmology. This is analogous to the fact, that the shape of the earth is only recognizable, when we leave the two-dimensional surface of the earth and enter a higher dimension, the third dimension „height". Mr. Lemaitre and Mr. Hubble were obviously incapable of even beginning to exceed the spatial horizons of their own experience. They simply lacked the knowledge of relativistic physics and Einstein's special ability of performing thought experiments and based on this, his ability of consistent and ingenious conclusion, that were required for this. The only apparatus required to perform a thought experiment is the brain. With the capability of a thought experiment, it is easily possible to explain an entire universe, just as we do in the course of this book. The ingenious masters of the thought experiment were *Newton, Planck, Einstein* and last but certainly not least *Mr. Karl Schwarzschild*. However, with the contribution of brilliant engineers and the help of their ingenious designs, the statements written in this book are verifiable. This verification has already been brilliantly provided by means of the space probes *WMAP, PLANCK, Pioneer 10* and *Pioneer 11*. Further, even more brilliant engineering achievements will soon help us to reaffirm these proofs. Not without certainty will the statements, written in this book, be disgracefully ridiculed by most of the „Big Bang proponents" (that is for sure), but their ridicule will, with the same certainty, be reflected onto themselves. Thank God that there are many sound scientists, who are willing to fight for the principles of science, which are: enlightenment, progress, and, over all, the pursuit of truth. Currently, the principles of cosmological science seem to be: endarkenment, regression, and an overall pursuit of deception.

As already mentioned, physics is not a religion and should not be misused for esoteric purposes, especially by those who are held in high esteem and are responsible for people who are interested in facts rather than deception. There is no excuse for irresponsible behaviour in regard to the people who expect to learn the truth and who put their trust in astrophysicists, because they believe in the legitimacy and integrity of scientists. The hard working people who pay taxes in order to finance the very expensive astrophysical science equipment and the wages of the scientists, deserve to be taken seriously. An astrophysicist is not a priest who discusses matters concerning faith, but rather someone who

should enforce the empirical acquisition of knowledge (Best regards to Mr. Hawking). Unfortunately, it seems, as if these two matters sometimes are confused in the field of cosmology. Alongside the Big Bang theory, we can abandon the terrible misconception of *dark energy* as well. It is believed, that the *dark energy*, „heats" the expansion of the universe. Just because some people either do not want to comprehend, or are incapable of comprehending that the observed redshift of spectral lines is not exclusively based on the *Doppler effect*, but rather on the *relativistic gravitational effect*, they have come up with the idea of *dark energy*. What a shame! This is comparable to the postulation of an ether in former times, which was said to be a medium to allow light waves to travel through the universe, because scientists could not grasp the idea, that light does not require a transport medium other than space itself. Let us consider the ancient idea of epicyclic planet motion. Epicyclic orbits were employed in order to try to explain the loop shaped movement patterns of the planets, observable in the night sky on the assumption, that our earth were the centre of the solar system. Of course, this turned out to be utter nonsense. The invention of this nonsense was religiously motivated, because the Roman Catholic Church did not want to lose its claim of infallibility and, thus, its influence on the people. This begs the question of what sort of esoteric circle in present time wants to cling to the spreading of the false Big Bang theory. Along with the Big Bang theory, the theory of cosmic *Inflation* (2) was thought up just to support the false Big Bang theory.

The *theory of Inflation(2)* is, next to the nonsensical gravitational waves of an impossible Big Bang, the peak of insolence and will evoke never-ending head shaking alongside roaring laughter with the benefit of historical hindsight. Assuming a big bang without inflation theory, the background radiation would, according to the original Big Bang model, not be 2.7 Kelvin, but be so low, that it could not be measured. The theory of Inflation is absurd in itself! Since this topic is a little complex, refer to the appendix „Theory of Inflation" (item 2, appendix), in which the theory of Inflation and its background are explicitly explained. The theory of cosmic Inflation as well as the „discovered" (fabricated) gravitational waves, are brazen and highly dubious

attempts at deception. They are a crying shame. These shameless and blatant misconceptions will, in the near future, go down as one of the most negative examples of rogue science in the annals of astrophysical „science", as well as many other theories, based on an alleged Big Bang, but also the highly dubious theory of so-called "*dark matter*", which will be considered in the following section. The Big Bang theory is completely unfounded, because an expansion of the universe does not exist. We will prove this in the course of this book. It is an irony of fate that the most important basis for the Big Bang theory will in fact provide the deathblow for the theory of an expanding universe. There is talk of *background radiation*. Eventually, it will be understood, that the Big Bang model, the theory of cosmic Inflation and the theory of dark energy are ludicrous and shaky fabricationss, born of boundless naivety and deceit. Those, who still promise themselves, with might and main and sometimes with dubious means and barely comprehensible arrogance, a Big Bang theory, which is already doomed to die, will definitely expose themselves to ridicule in the near future. Before the very detailed discussion of the actual source of background radiation, we will briefly discuss the so-called "dark matter", which will definitely reap laughter in the future. The following chapter deals with the question, why there is no dark matter and how it was possible, that the incredibly amateurish theory of dark matter could be fabricated.

THE MYTH OF DARK MATTER

Based on the simple fact, that the dynamic of the rotation of galaxies is not correctly understood, the idea of *dark matter* was fabricated. This *dark matter* serves, according to the statements of cosmologists, the purpose of preventing galaxies being torn apart. Astronomers falsely assume, that the *rotational dynamic of galaxies* is comparable with the *orbital dynamic of planets,* which are described by *Kepler's third law of planetary motion* (valid for single planets orbiting a single star). As a consequence, *dark matter* is postulated. The German astronomer, mathematician, physicist and Protestant theologian Johannes Kepler discovered the orbital laws of planetary motion in the 17th century, which were described later on by Newton´s law of gravitation. as well. To compare the *orbital dynamic of planets* with the *rotational dynamic of*

galaxies defies description. Why should the orbital dynamic of a complex rotating system, such as a galaxy, behave according to the extremely simple, orbital dynamic of single planets, orbiting a central star? Dear cosmologists, do you really think that this is a logical assumption? The two characteristics are not at all comparable. The distribution of mass in a galaxy is not at all comparable to the distribution of mass in a solar system. Due to the fact, that the rotational dynamic of a complex rotating system, like a galaxy, does not behave according to Kepler's third law, a kind of dark mystical force was postulated, allegedly originating from dark matter, which should align everything. Is this not a great example of sound physics? These kinds of ideas are not science but rather represent a complete lack of physical experience. If you cannot explain something, then you simply propose a dark and mystical cause. Now, we will discuss this topic with the application of sound physics.
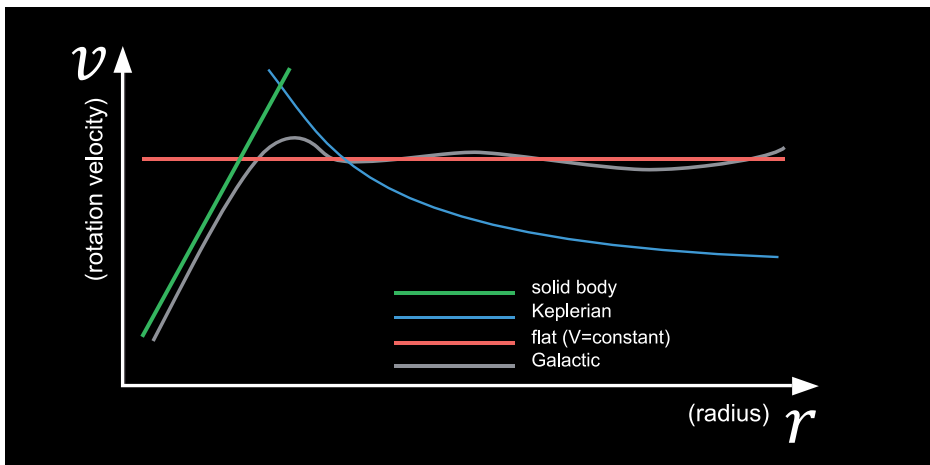
Fig. 54

Let us have a look at the graphic above. First, we consider the green line. This line shows the ratio between the speed of rotation „*v*" of a point on a rotating *rigid body*, for example, a disc shaped top, and the distance of this point from the centre of rotation of the top „*r*". It is logical that the rotational speed increases linearly in proportion to the radius. The speed of rotation of a *rigid body* is mathematically describable using the following equation:

$$v = r \cdot \omega$$

Plotting this function, the following graph results:
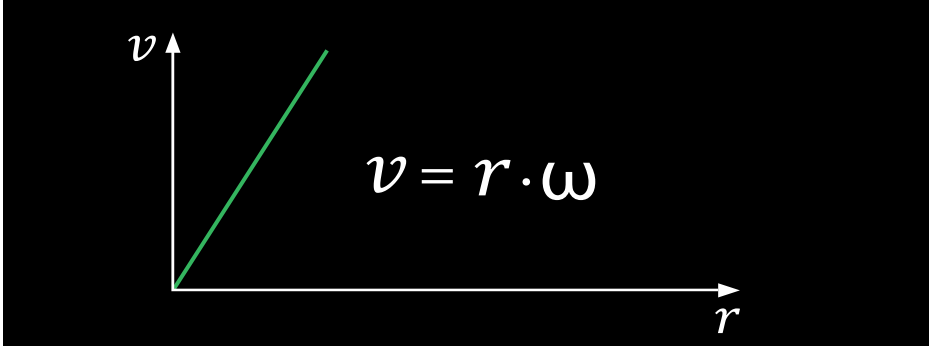
Where „v" is the speed of rotation which increases linearly with increasing distance „r" from the centre of rotation of the rotating rigid disc. „ω" is the rotation period of the rotating rigid disc (for example one rotation per second) and defines the gradient of the green line. The fast the rotation, the steeper the gradient.

The blue curve depicted in fig. 54, by contrast, shows the *orbital speed „v"* of planets in a planetary system, orbiting a central star, depending on the distance from the central star „r". The orbital speed of the planets in a solar system complies with the characteristic of this blue curve, if the planets are not influenced by each other or even other masses. This restriction says it all, and we could spare further explanation. But let us go on with the explanation. The blue curve is mathematically describable by the following equation, which is a derivation of Newton´s law of gravitation, formerly described by Kepler´s third law:

$$v = \sqrt{\frac{G M_{Star}}{r}}$$

Plotting this function, the following graph results:

$$v = \sqrt{\frac{G\,M_{Star}}{r}}$$
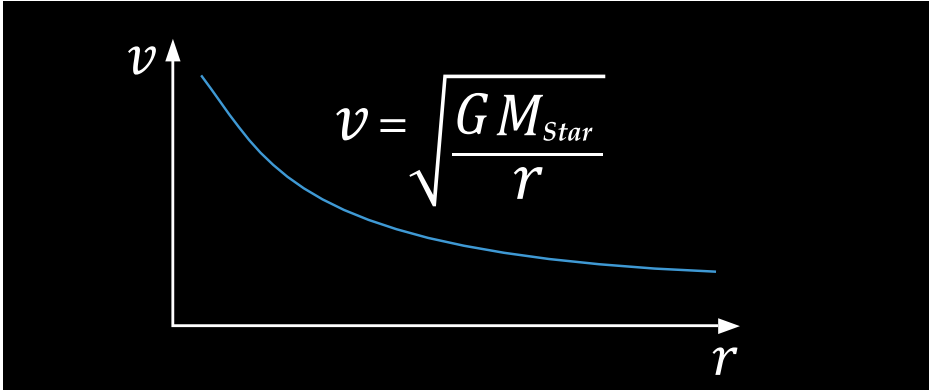
Fig. 54b | This graph corresponds exactly to the blue Kepler curve in fig. 54.

Where „v" is the orbital speed of a planet (which is independent from the mass of the planet), „G" is for the gravitational constant, M is the mass of the orbited star and „r" is the distance of the planet in regard to the orbited star.

The grey line, depicted in fig. 54, shows the *rotational speed* of a galaxy „v", depending on the distance from the galactic centre of rotation „r", as one can observe in reality. The astrophysicists had, however, expected that the *rotational speed* of the galaxies would follow the blue curve that is in compliance with Kepler´s third law. In fact, one actually observes a rotational dynamic in compliance with the grey line. Due to the discrepancy between the grey line and the blue curve, it was concluded „brilliantly" that there is probably a *dark force* or *dark matter* in the environment (the halo) of galaxies in order to compensate for the difference between the blue curve and the grey curve.

What kind of understanding of physics is that? This is simply scandalous and has nothing in common with sound physics. Due to this nonsense, people have been searching for dark matter in several disused mines and tunnels all over the world for over a decade, and as long as the money supply remains, the search will continue until the cows come home. The „scientists" who are working there, will certainly be happy to search for what does not exist because, consequently, their "research" will guarantee them employment until retirement. Afterwards, even

their children and grandchildren could hope for a job because the search for dark matter would last endlessly due to the fact that one cannot find what does not exist. Following is the simple explanation regarding the origin of the observed rotational dynamic of galaxies. In order to improve the understanding of the mentioned problem, imagine a galaxy as a rigid rotating disc. With increasing distance from the centre of rotation, the speed of rotation increases linearly in accordance with the green line depicted in the graphics (fig. 54, 54a). Now imagine a single central star, orbited by some individual planets, which are not mutually influenced by each other (this is a very important restriction). The masses of the planets are mostly extremely small in relation to the mass of a star. Planets are, in principle, „little crumbs" orbiting a huge star. For example, our sun contains about 99,9 % of the total mass of our planetary system. The orbital velocities of the planets correspond to the blue line in the graphic, thus, to *Kepler's third law*, i.e. *Newton´s law of gravitation*. Probably nobody would expect the *orbital dynamic* of planets orbiting a star to be comparable to the *rotational dynamic* of a rigid disc. In the same way, one cannot compare the *orbital dynamic of planets* with the *rotational dynamic of galaxies*. They are two very different beasts. A planetary system is actually a simple system and cannot, under any circumstances, be compared with a galaxy. One would think, that nobody can be so naive as to do so, however, believe it or not, astrophysicists work this way with hardly the blink of an eye. Astrophysicists bluff with a blank poker face while spreading the nonsense of dark matter all around the world. This circumstance beggars belief. However, let us go on with our considerations. We all know, that a galaxy is neither a rigid body nor a planetary system with a few tiny celestial crumbs (planets) orbiting a single massive star. Considering a single star in a galaxy, nobody would assume that the rest of the mass of the galaxy is concentrated in the galactic centre, as it is in a planetary system. We all know that a galaxy contains up to a few hundred billion stars which form a rotating disc. How boundlessly naive one must be if one wants to compare the *rotational dynamic of galaxies* with the *orbital dynamic of planets* in a planetary system? How can one seriously argue that one can apply Kepler's third law to the rotational dynamic of galaxies? This is just one example of nonsensical curiosities in the field of astrophysics. The rotational dynamics of galaxies are actually a kind of mixture of the

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two previously described characteristics, i.e. of the *rotational dynamic of a rigid body* and of the *orbital dynamic of planets*. The hundreds of billions of stars distributed in a galactic disc have a kind of smooth gravitational bond. The stars interact with each other, thus, a galaxy is a huge cluster of gravitationally interacting stars which are even able to form spiral arms (this is only possible due to mutual gravitational interaction between billions of stars forming a galaxy). In the region of the galactic centre, the stars are packed very tightly. The speed of rotation of the central stars of a galaxy initially increases steeply (according to the described green line) with increasing distance to the centre of rotation in a similar manner to a rigid rotating body, because there is a particularly high density of stars and the gravitational bond is much stronger than in the more distant regions of the galaxy. However, with increasing distance from the centre of rotation, the speed of rotation does not decrease as described by *Kepler's third law*, since – although the gravitational bond is becoming weaker than in the central area of the galaxy – the gravitational bond is still strong enough to keep the curve almost horizontal. That is the answer of the problem, thus, a dark force or dark matter, are not necessary to describe the rotating dynamic of galaxies.

Astrophysicists argue, that the orbital speed of rotation (around the centre of rotation of a galaxy) of stars in the edge regions of a galaxy would be too high to keep the stars within the galactic system. The centrifugal force would catapult the stars out of the galaxy and solely the dark force of a dubious dark matter could prevent this. That would indeed be the case, if one were considering a single isolated star in the edge region of a galaxy and if one furthermore presumed that the rest of the mass of the galaxy were concentrated in the centre of the galaxy, a characteristic that we can find in a planetary system. In this case a star in the edge region of a galaxy would indeed have to comply with Kepler's third law to not be catapulted away. However, a galaxy contains some hundred billions of individual mass points (stars) distributed more or less densely on a rotating disc, which is not at all comparable to a planetary system. We already mentioned, that a star of a planetary system contains about 99,9% of the total mass of the planetary system and that the planets are orbiting this massive star, where as a galaxy does not have such a single massive centre but is rather a rotating system itself, similar to a rotating

disc. That is not at all comparable but it seems that the astrophysicists do not have a problem with this fact and measure the two completely different systems by the same yardstick and even create the peak of nonsense, dark matter.

The actual orbital speed of stars in a galaxy, in regard to their distance from the galactic centre, complies with the grey curve of the above graphic (fig. 54). Exactly this fact makes a galaxy stable and even makes it possible to create the spiral structure of a galaxy. If the speed of rotation of stars of a galaxy actually complied with Kepler´s third law, „black holes" alone would exist in our universe since the galaxies would long ago have collapsed or more precisely could not have been formed. If the speed of rotation of the stars of a galaxy actually fully complied with the rotation characteristic of a rotating rigid body, not a single galaxy would exist in our universe since the galaxies would have broken apart due to centrifugal force. The actual encountered speed curve is mandatory in order to keep galaxies stable and this is the inevitable result of the actual mass distribution within a galaxy. There does not exist dark matter or a dark force! Such a dark matter (dark force) is an esoteric daydream of some people calling themselves astrophysicists. The postulation of a dark force in the form of dark matter is pure esotericism or dilettantism. The „dark age" sends its regards and we surely do hope that we never end up in „the dark side of the force". When will cosmology, that is based on reliable physics, reappear? What is currently happening in the field of cosmology cannot be called science with a clear conscience. The peak of wondrousness is the fact, that the scientists who fabricated the theory of dark matter actually awarded some prizes for their attainment. Congratulations!

Fig. 54 c | A galaxy exists of about 100 billion stars, forming a complex rotating system. This rotating system is not at all comparable with the orbital dynamics of single plantes orbiting a single massive star. However, so-called „modern cosmologists do so and fabricated a dark matter in order to describe the actual rotational dynamics of galaxies.

POPULATION III STARS AND GLOBULAR CLUSTERS

Unlike *Population I stars* - which have, like our sun, distinctive metal lines in their absorption spectra (item 9, appendix) - *Population III stars* are supposed to be the first stars of our universe, formed about 13 billion years ago after the „sufficiently cooled-down" of the expanding universe. Since it is assumed - and this is as just as absurd and unproven as the Big Bang theory itself – that the universe originally consisted of about 75 percent hydrogen and 25 percent helium, the first stars should not have any metal lines in their absorption spectra. But no matter how deep one looks into space, there is no trace of them. This is simply, because *Population III stars* do not exist just as a Big Bang never happened. The completely unproven assumption that solely the elements *hydrogen* and *helium* existed in the „young" universe has no empirical evidence whatsoever. At this point, it is anticipated, that we will soon be able to analyse the spectra of stars of our ancient universe, which, some 22 billion years ago, emitted the light that we detect nowadays in form of *background radiation.* These ancient stars formed in our extremely cold universe, which always had the same extent as it has today. Even the most distant observable galaxies have metal lines in their absorption spectra. This is a slap into the face of the Big Bang proponents. But do not worry, an explanation is easily conjured up out of a „magic hat". One highly dubious explanation is, that we cannot find any *Population III stars* because they conveniently exploded very soon after they were formed. It is believed that the first stars were massive monster stars. Such massive stars have a shorter „life" than less massive stars. The fusion processes in massive stars run much faster than, for example, inside our sun, which is quite an ordinary star. It is actually assumed, that these Population III stars have „died" a few million years after their formation, thus, we cannot observe them. This assumption is absurd due to two reasons. For one thing, our universe today would be made up solely of „black holes" since these very massive stars definitely would have ended as „black holes", i.e., *black spheres* (you remember, according to „modern cosmologists, stars with more than three-times the mass of the sun will become „black holes"). Another thing is the fact that there would have been a kind of mass extinction of the first giant stars. That would have resulted in a cheerful firework display. Billions of billions of giant stars would have exploded within a

relatively narrow time frame, while emitting a tremendous amount of energy, such as ultra-highly-energetic X-rays and gamma rays. And we are not even able to detect such a universal, highly energetic firework display with tremendously large bursts of energy within a fairly narrow time frame? The whole argument is absurd. The following scenario is much more probable: the metal-poor stars in so-called *globular clusters* (*Population II stars*) are ancient stars of our universe.

Fig. 55 | Omega Centauri, NGC 5139, Globular cluster. A globular cluster is a collection of stars that orbits a galaxy as a satellite. These clusters consist of stars which are even older than the oribted galaxies themselves.

These ancient stars did not arise subsequent to a Big Bang but rather in a cold universe in which metal already existed. Thus, these stars already contained metal, although, less metal than *Population I* stars like our sun. The stars of the *globular clusters* are likely to have formed before the galaxies. Within *globular clusters,* orbiting the galaxies, one finds stars that are older than the galaxies themselves. These stars are part of the *globular clusters* which are typically encountered in the galactic halos! Once again, the globular clusters probably existed before the galaxies. It might very well be possible, that *globular clusters* originally were a kind of „condensation cores" out of which galaxies

finally formed. It is likely that the measured background radiation is the light of the stars of those *globular clusters* which first appeared in the universe and whose light we register today in form of *background radiation,* due to the effect of the gravitational potential of the universe on their emitted light. During its long journey, the light of very distant *globular clusters* was subject to a gravitational redshift toward the long-wave microwave range and is now detectable by us in form of *background radiation* with a wavelength of about *2mm*. However, the ancient stars did not form after a Big Bang but formed out of the extremely cold gas of the former universe. This point will definitely be proven within a decade by means of the next generation of high-definition background radiation measurement satellites or with the help of ALMA (Atacama Large millimeter/submillimeter Array). As a consequence, the Big Bang theory will finally be refuted. That´s for sure.

For the sake of thoroughness, it is repeated that the sun is a *Population I star*. Such stars have distinctive metal lines in their absorption spectra. It is believed, that the formation of our sun was caused by the explosion of a burned-out Population II star. Since the burned-out star had produced heavy elements during its fusion processes, the metal-containing explosion gas of the exploded star had mixed with the surrounding gas masses which subsequently collapsed to form new stars of Population I. Thus, more metal is to be found in *Population I stars*. Such processes can, in fact, be observed within the galaxies.

THE REAL CAUSE OF BACKGROUND RADIATION AND THE DEMISE OF THE BIG BANG THEORY

What we can detect in form of *background radiation* nowadays was once the light of ancient stars whose maximum radiation intensity probably lay in a mean wavelength range of about *500 nanometres* (range of visible light). Due to the *relativistic gravitational redshift*, we detect this wavelength in form of a *thermal radiation* with a wavelength of about 2 millimetres, which corresponds to a redshift of about *z = 3999*. This is the largest redshift known to us. The way that this redshift value is calculated will be explained later in more detail. This really enormous red shift arises, because the light of the ancient stars (theses stars did not occur after a Big Bang) has covered almost the entire diameter of the universe. In order to make statements about the *background radiation*, it is important to examine the characteristics of the *background radiation* in more detail. For this purpose, let us consider the curve of the measured radiation intensity of the *background radiation* detected by the NASA satellite *COBE*.
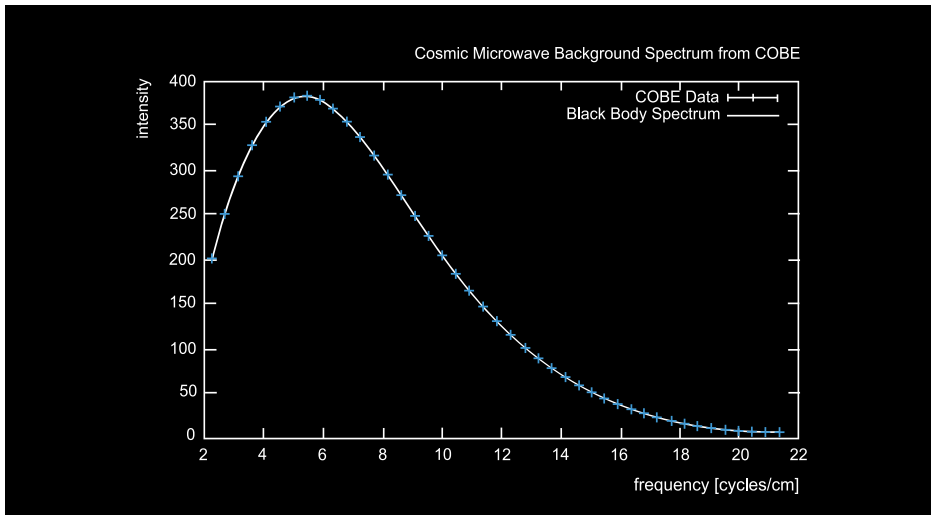
Fig. 56 | The curve of the radiation intensity of the background radiation above was detected by COBE. The term frequency in this graphic does not indicate the number of cycles per unit of time (cycles/second) as usual, but indicates the number of cycles per centimetre (cycles/centimetre). So, we deal with a curve which represents the radiation intensity of the background radiation versus wavelength! Therefore, the maximum of the curve is about 5 cycles / cm. This results in a wavelength of about 2mm.

The above curve (Fig. 56) shows the wavelength range of the maximum intensity of *background radiation*. Please, do not allow yourself to be deceived into believing, that the value of the wavelength is given as a *frequency* (cycles/second). The term „*frequency*“, in the common sense, expresses the number of cycles per second but, as one can see from the term in brackets, the term *frequency* here defines the *number of cycles per centimetre (cycles/cm)*, which is a unit of length. Thus, the maximum intensity of the *background radiation* is at about 5 cycles per cm which corresponds to a wavelength of about *2 mm*. We all know the term „*2.73 Kelvin background radiation*“ (0 Kelvin represents absolute zero, thus, a temperature of about - 273 ° Celsius). This term has been used for so long so that nobody ever considered this term in somewhat more detail. The *2.73 Kelvin background radiation* bears its designation incorrectly! With the help of *Wien´s displacement law*, we can calculate the wavelength of the maximum of the emitted radiation of a so-called *black body* (19) (the universe can be considered as black body). Would the universe actually have a background temperature of 2.73 Kelvin, the obtained maximum would lie, according to *Wien´s displacement law*, in a wavelength range of approximately *1 mm*.

Here is the equation of *Wien's displacement law*:

$$\text{Wellenlänge}_{max} = 2897{,}8 \; \mu m \; K/T$$

(where „K“ stands for Kelvin, and „T“ stands for the plugged in value of 2.73 Kelvin)

Thus, even the name „*2.73 Kelvin radiation*“ is indeed wrong. According to this logic, the background radiation should bear the name „*1.4 Kelvin background radiation*“ which corresponds to a wavelength of about 2 mm. There is no mystery about this. This is a very impressive example of manipulation in the field of astrophysics. The practical proofs, that the Big Bang theory and the claims deduced by this theory are definitely wrong are explained below. In the year 1992, engineers allowed us to see the first low definition picture of the *background radiation,* taken by means of the *COBE* satellite. The picture still had a very low resolution but it was clear, that the *background radiation* is not homogenous (isotropic) but inhomogeneous (anisotropic).

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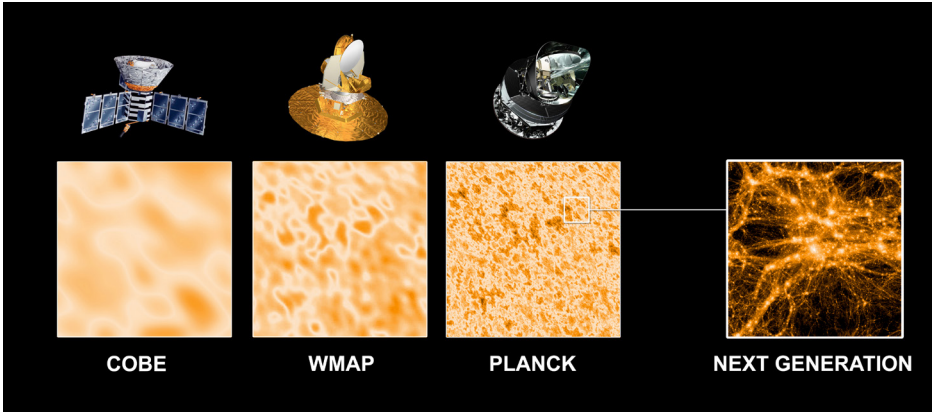
Fig. 57 | Different pictures of background radiation with increasingly improved resolution.

In the year 2001, a picture was taken by means of the *WMAP* satellite with far better resolution. This is an example of engineers allowing us to view something that is completely misinterpreted by the cosmologists. In March 2013, with the help of the European *PLANCK* satellite, an even higher resolution was obtained. It is clearly apparent that in respect of the *background radiation*, we are dealing with a highly filigree-type structure. What we can see here is not a diffuse cloud of matter, consisting of hydrogen and helium gas, out of which stars and galaxies later formed, but we can see are ancient stars, ancient globular clusters and ancient galaxies.

Future detailed pictures with an even higher resolution capacity will sound the death bell for the Big Bang theory and all of the accumulated nonsensical theories based on the Big Bang theory. With the help of high definition satellites and ALMA, the statements written in this book will be confirmed. The pictures of *COBE, WMAP* and *PLANCK* are presently still interpreted as pictures of the distribution of a super-hot gas, which is believed to represent a kind of „*condensed energy*" of the alleged Big Bang in form of hydrogen and helium gas. However, what the pictures of the *background radiation* really show, is de facto the distribution of stars (galaxies) of our ancient universe, which are about 22 billion light years away from us. The picture of the *background radiation* does not show the distribution of a super-hot hydrogen and helium gas out of which stars and galaxies formed. There is a huge difference. The ancient

stars did not occur after a hyper-hot Big Bang, rather, they formed out of the gas of an extremely cold universe which always had the same extent as it has today. The *2.7 (1.4) Kelvin background radiation* is the light of stars of our ancient universe with probably a maximum radiation intensity in a wavelength range centered on about *500 nanometres ($5\cdot10^{-7}$ m)*. This value is roughly the mean value of all stars (for example, young massive stars have their radiation maximum in a range of about 150-300 nanometres and less massive stars in a range of 600-700nm). Our sun is a perfect example of an average star in our universe. The sun has its maximum radiation intensity (fig.58) in a range centred on 500 nanometres (the range of light lies between 380 nm and 720 nm). During its long journey through the universe, the light was subject to the gravitational potential of the universe, thus, redshifted towards a wavelength of *2 mm* (microwave range), which corresponds to a redshift of *z = 3999*. In the future, we will even be able to analyse the spectra of the ancient stars and then we will know exactly which elements the ancient stars and, thus, the former universe contained. One can certainly count on the engineers. It should be pointed out again, that a very long time ago the universe appeared completely different to how it does today. It was not hyper-hot but actually extremely cold and dark. Out of this cold black silence, the stars formed whose emerging light brightened the whole universe within a relatively narrow time frame. This scenario must have offered a spectacle unlike any other. Beethoven's „Ode to Joy" would have been suitable as background music to this breath-taking spectacle. **The universe has always had it's full extent, meaning that it has always existed with its present extent. Background radiation is the light of ancient stars of the universe. There was no Big Bang, no hyper-density, no hyper-pressure, no hyper-temperature, and no minimalistic space, even no beginning of the universe.** The reality was completely different. There was an extremely low mean density of a few atoms per cubic meter (a nearly perfect vacuum), a vanishingly low pressure and a cold, which was in the range of zero Kelvin thus in the range of approximately -273 degrees Celsius. The total mass of the universe never changed, because exactly the mass of our universe is needed to firmly define the entire space (volume) of the universe and, thus, its fixed extent. The complete procedure of the „enlightenment" of the universe by the first stars can be paraphrased as *„cold coming out."*

With the help of the already derived equation used for determining distances in the universe, we will now try a practical application. If we consider the spectrum of the light of the sun, it has its maximum intensity at a wavelength of about 500 nanometres.
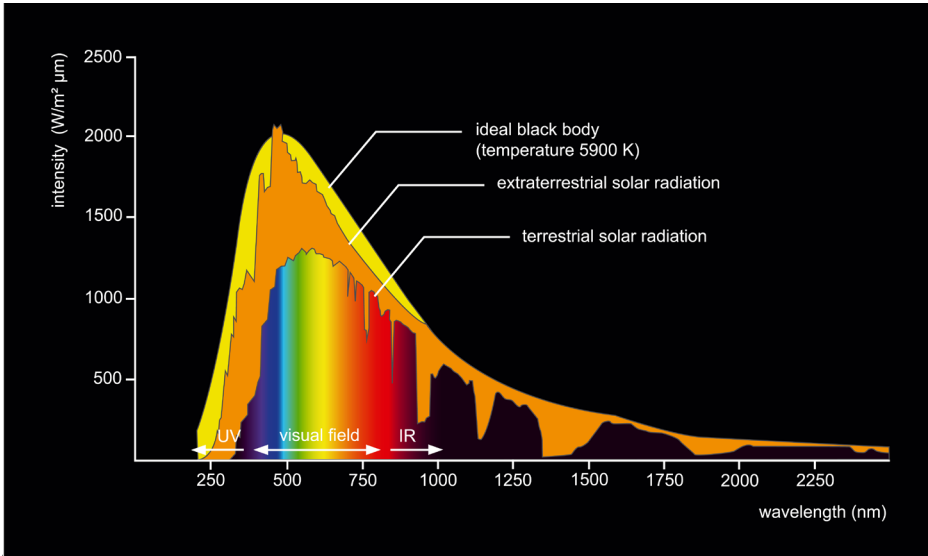
Fig. 58 | Distribution of radiation of our sun within a wavelength range of 250 nm - 2250 nm.

Now we suppose that the former stars emitted a radiation with a maximum intensity at a wavelength of $5 \cdot 10^{-7}$ meters (other supposed wavelengths within the wavelength range of visible light do not change the result of our calculation significantly) .The wavelength of the maximum intensity of the 2.7 (1.4) Kelvin microwave background radiation is to be found at a wavelength of about 2 millimetres, i.e. $2 \cdot 10^{-3}$ meters. To remind you, here once again, is the equation for determining distances in our universe, based on Einstein´s relativistic gravitational redshift, Planck´s equation and Newton`s gravitational law:

$$\frac{4GM_U}{c^2}\left(1 - \frac{\lambda_e}{\lambda_r}\right) = D = \frac{c^2}{g_U}\left(1 - \frac{\lambda_e}{\lambda_r}\right)$$

If we plug the value *5·10⁻⁷ meters* for λ_e (*emitted wevelength*) and the value *2·10⁻³ meters* for λ_r (*received wavelength*) into the above equation, the result is a distance that corresponds - up to 6.85 million light years – to the diameter of the universe (max. possible distance between two points in the universe), when we assume a radius of the universe of 13.7 billion light years (that means a diameter of 27.4 billion light years). We assume this radius, because it seems familiar to us. However, we will empirically determine the mass of the universe and, thus, its actual diameter with help of the *Pioneer anomaly*, to which we will refer later. For clarification: The diameter of the universe corresponds to the maximum possible distance between to point within the universe. It is anticipated, that the diameter of the universe, contrary to the previous value, amounts to about 22 billion light years (±15%). For now, we will work with the familiar value of 27.4 billion light years, thus, twice the assumed radius of 13.7 billion light years. As we already know, the *background radiation* corresponds to the residual energy of the photons(15) which have almost covered the entire diameter of the universe. The light of the ancient universe has covered a distance of about 27.393 billion light-years. This means, in other words, that the photons of the *background radiation* have covered 99.9975 percent of the diameter of the universe. Thus, the photons of the background radiation were emitted about 27.393 billion years ago.

Once again, these calculations are based on an estimated mass of the universe and an estimated diameter of the universe; however, in the course of this book we will find a way in order to determine the actual mass, thus, the actual diameter of the universe. It is not possible to determine the diameter of the universe just by means of the observed redshift, as it is done with the fabricated Hubble equation, just as it is not possible to determine the gravitational potential and the mass of the universe by means of the observed redshift. However, if one equates the diameter of the universe to 100 percent, then it is possible, with help of the above equation, to determine the distances of celestial objects relative to us as a percentage of the diameter of the universe. Do not worry, we will explain this a bit later with help of a simple calculation.
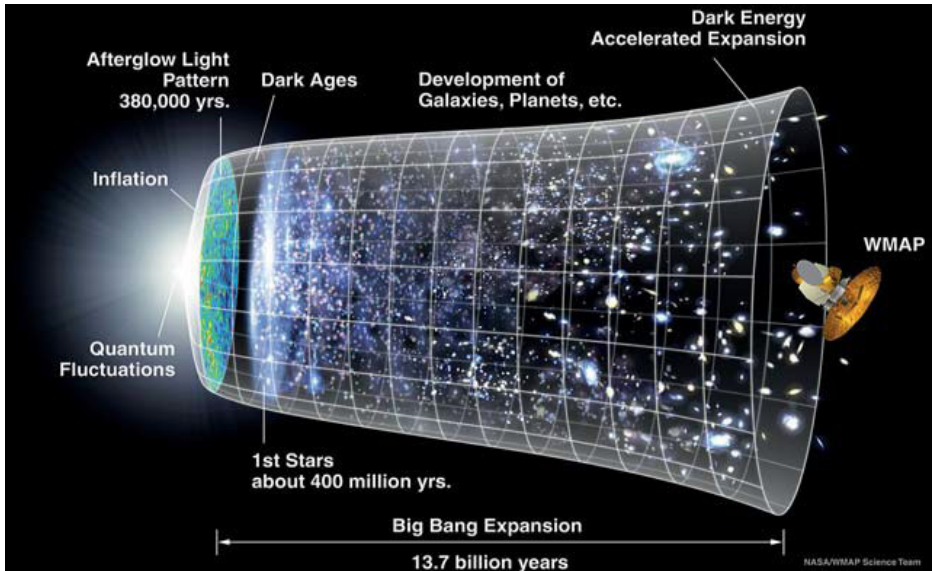
Fig.59 | Illustration of the supposed Big Bang scenario with initial superluminal Inflation of space followed by a dark period .

According to the above „*cosmic inflation model*", background radiation was created 380,000 years after the supposed Big Bang, followed by a „*Dark Age*" and then the first stars formed. This scenario is, however, pure nonsense and arose from pure dilettantism. The illustration has absolutely nothing in common with sound physics. It is nothing more than a poor fairy tale.

To bring the observed facts of the universe in line with the nonsensical Big Bang theory, the „*overturned beer glass*" (illustration above) was fabricated. According to this illustration, after an extremely rapid expansion of the universe (a phase of *superluminal inflation of space* which is explicitly explained in item 2, appendix), a period of „moderate" expansion followed, after which the expansion accelerated again. This adventurous expansion characteristic was fabricated, among other reasons, because there is a discrepancy between two different methods for determining the distances of objects in the universe: one method is the determination of the distances of observed objects with help of the Hubble equation, based on the redshift of the spectral lines of the observed objects. The other method is the determination of distances

with the help of the ratio of the apparent magnitude of an object to the actual magnitude of the same object. What does that mean? For example, if a lamp is moved away from an observer, the light of the lamp (relative to the observer) seems to become fainter with increasing distance from the observer. The brightness of the lamp apparently becomes fainter with the square of its distance, relative to the observer. At a specific distance between the lamp and the observer, the light of the lamp seems to have only half its previous brightness. Doubling the distance, the apparent brightness decreases to a quarter of the actual brightness of the lamp. If the actual magnitude of an celestial object is believed to be accurately known, then the distance of this object can be reliably determined via so-called *luminosity-distance-measurement,* using its apparent magnitude. However, the results obtained by means of the comparison of apparent and absolute magnitude are not consistent with the results obtained by means of the Hubble equation and the observed redshift. The deeper we look into the universe the more the measured results between the two methods differ from each other. This in turn demonstrates, that the Hubble equation is pointless, because the universe is not actually expanding. We already know, that cosmologists do not object to cooking the books. This means that cosmologists had once again to fiddle the figure and use sleight of hand so that their observations conveniently agree with their theories and conform with the Big Bang theory. This led in part to the „overturned beer glass" that is as nonsensical as the Big Bang theory itself.

We already know that the *2.73 (1.4) Kelvin temperature of background radiation* is a picture of the stars whose emitted photons lose a considerable amount of their original energy, due to their travel through the gravitational potential of the universe. When the light from the early stars of the universe reaches us, we can still observe the stars, but solely in the range of microwave radiation. Furthermore, while the light was travelling to us, it underwent an enormous time dilatation. But what has yet to be addressed is, that the image of the stars was additionally subject to a 4000 fold magnification during its travel through the universe. Yes, you read correctly. **The background radiation is an extreme close-up of a relatively small region of the universe!** But this phenomenon, along with the phenomenon of time dilatation, will be explained in a

later section of this book in more detail. Dear cosmologists, how do you intend to bring these facts into accordance with the Big Bang theory? In the near future, high-definition background radiation images will very clearly prove the described phenomena. Then, the demise of the building which you have built on sand, called the Big Bang theory, will be imminent, without doubt. Thus, background radiation is definitely not evidence of a Big Bang, rather high-quality images of this radiation will show the early stage of stars in high definition in the near future, gravitationally magnified and in slow motion. Is that not a great gift from God to help us understand the miracles of our universe? This will sound the death knell for the Big Bang theory.

Dear cosmologists, you can refuse to accept the demise of your nonsensical theories as much as you want and you can even award one Nobel Prize after the other in order to try to underpin the Big Bang theory, but the theory remains hogwash! You might conjure up as well, with much pomp and circumstances, completely nonsensical gravitational waves, based on an impossible Big Bang, however, this is really a last, miserable and desperate attempt to uphold a lie. This lie clashes with reality. The demise of the Big Bang theory cannot be prevented, even if this does not fit in with the plans of some cosmologists or rather the members of some esoteric circles. It is a tragedy that the construct of a Big Bang theory has been maintained for so long and that „super intelligent cosmologists" invented, among other stupid „theories", concepts such as dark energy and a theory of superluminal cosmical inflation of space (2) in order to try to substantiate an esoteric, non-physical idea. This has nothing in common with science but everything in common with guesswork. One can easily succumb to temptation assuming that a small but powerful group of key players has no interest in breaking up the Big Bang theory. In spite of the most expensive equipment and multi-billion dollar researches, the so called „modern cosmologists" behave with gross negligence, attempting to discard the laws of physics, while lots of nonsensical theories are fabricated to support a nonsensical Big Bang theory just to set up a purely esoteric „cosmology" or rather a kind of cosmological science fiction religion. But what will happen when cosmologists are forced to declare that the Big Bang theory is wrong? **The biggest problem and the**

main resistance to removing the nonsense of Big Bang will indeed be a psychological problem. Imagine how the professors will feel, who have taught the Big Bang theory to their students for decades, when they suddenly have to admit that they taught a theory that violates all the principles of the laws of physics although the facts were sitting on the table. Imagine the scientists who received awards or even a Nobel Prize connected with the substantiation of the Big Bang theory, or imagine the multitude of publications of the print media and the abundance of TV-documentaries that are suddenly completely obsolete and have to be shredded, because what they state is nothing but nonsense. These documents will soon provide evidence of a dark era in the history of astrophysics. The entire astrophysical division will be completely embarrassed by having to admit that the cosmologists have drawn completely wrong conclusions for decades, in spite of the billion-dollar instruments that they had at their disposal. Some scientists who have become celebrities in the field of cosmology will have to publically admit their mistake if they were amongst those who immersed themselves fully in the Big Bang theory and dark forces. They will be accused of not knowing what they were talking about. This is the greatest resistance that has to be overcome: human vanity.
Nevertheless, the more the Big Bang proponents react against the decline of this theory, the worse will be their downfall. We are currently in a situation similar to the time, when the Roman Catholic Church wanted to retain the Ptolemaic world view (according to which the earth was located in the center of our solar system instead of our sun) with the aid of a bizarre epicyclic planetary motion model. Thank God that this odd system vanished into the dustbin of history. Let us hope, that it will not take too much time before the theory of dark energy, the theory of dark matter, the theory of the superluminal cosmic inflation of space, the classical theory of black holes and the Big Bang theory (including the alleged gravitational waves of a supposed Big Bang) likewise vanish into the dustbin of history. What the Inquisition of the Holy Roman Catholic Church did in the past, by means of physical torture, in order to prevent the progress of science and to prevent the truth from being revealed, the representatives of science are doing today by much more subtle means, namely prevention of critical articles in scientific literature and the discrediting of dissenters. History is repeating itself right before

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our eyes. The extent of the universe is irrefutably and clearly determined by its mass, stop, fullstop, finish! All alternate assertions contradict the basic principles of the laws of physics and are complete nonsense. Trying to build a high dam to hold back the flood of truth and empirical knowledge is doomed to fail. The higher and more massive the dam the stronger the pressure becomes until finally the dam will be torn down. The truth will always break through against all human resistance. This is just a fact of life. World views and world orders which are based on lies are always doomed to fail.

If we look into space, then we look along the curvature of space, or, one can say, along the „spatial surface" of a sphere which is formed by our universe itself. We ourselves and the entire universe are located within this globular „spatial surface". But this is just a simplification. Our brain cannot really imagine our universe because this goes beyond the brain´s three-dimensional apprehensive faculty. Thus, in order to understand how our universe actually works, we have to „watch" our universe from a „higher level", that is from a kind of 5th dimension. We just have to imagine that the spatial universe we are living in forms the „surface" of a globe (**see fig. 60 next page**).
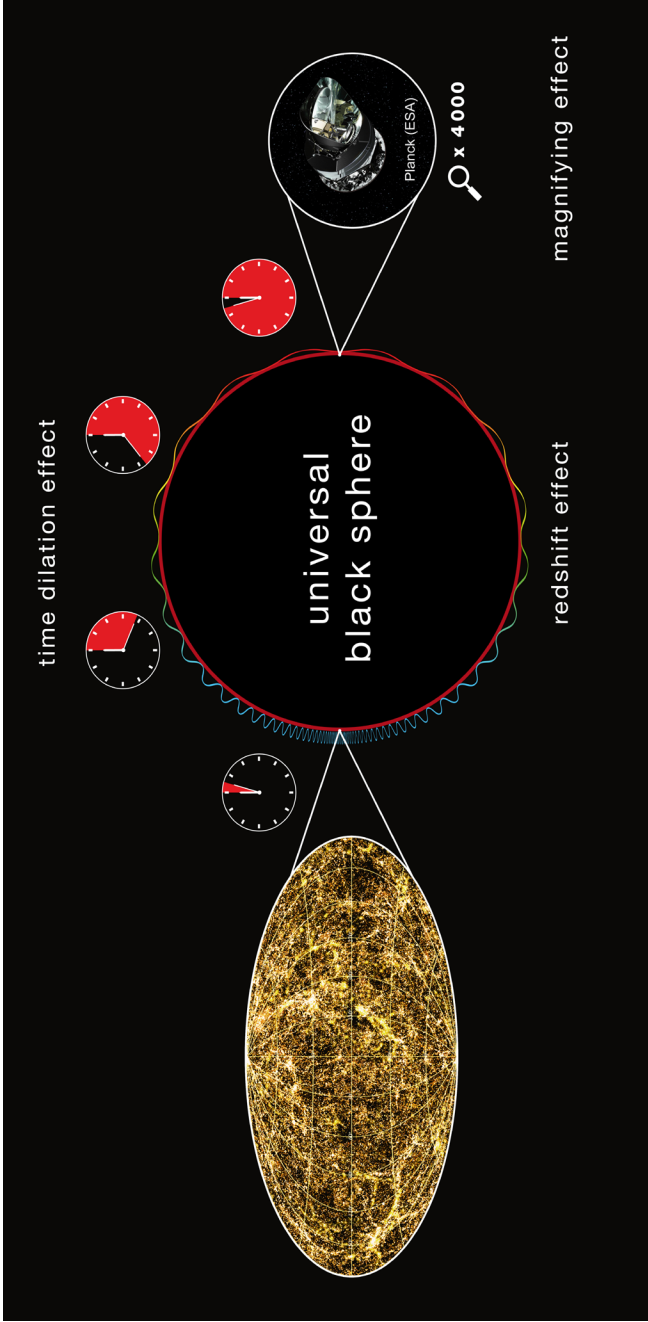
Fig. 60 | By means of this illustration, one recognizes the principle of the relativistic gravitational redshift. If a far-off object emits a light wave, then this light wave shifts towards a longer wavelength due to the gravitational potential of the mass of the universe. In the case of background radiation, the light waves which were emitted about 22 billion years ago (this value will be determined empirically in the course of this book), have covered almost the entire universe. Thus, they are received by us as microwave radiation! The half perimeter of the „universal globe" corresponds to the diameter of the universe. Opposing locations on the „universal globe" are at the maximum possible distance from each other. However, the radiation that we detect in the form of background radiation is not simply the gravitationally red-shifted light from the stars which are located diametrically opposite to us. Additionally, the light has been subject to an enormous time dilation (4000 times) and allows us to watch a 4000-fold magnified image of a small area of the universe located opposite to us. Our entire firmament is a magnified 360°-projection (22) of a small part of the universe which is located diametrically opposite to our position. An observer, living in the diametrically opposite location to us, can observe the part of the universe we are living in in in the form of background radiation. Thus, he can see the region of the universe we are living in as it was 22 billion years ago.

The furthest point in our universe relative to our position is the diametrically opposite point on the „surface" of the „universal globe". We receive *2.7 (1.4) Kelvin background radiation* as a kind of rudimentary remnant of the light of the ancient stars of our universe in form of *microwave radiation*. However, this light did not occur after a Big Bang. As already mentioned, before the first light appeared in our universe, there was a „dark period" as well, but it was a completely different dark period than associated with the Big Bang scenario. Before the first stars formed, the universe was extremely cold and dark. The density of the universe was almost equivalent to a perfect vacuum. The mean density has never changed, but the concentration or agglomeration of matter within the universe has changed. This of course does not have an effect on the mean density of our universe never changes. The first stars emerged from the homogenously distributed matter of the universe, which was extremly cold. The "illumination of the universe" happened within a narrow time frame. The background radiation is nothing other than the emmited photons of the stars of the universe which has been subject to a *relativistic gravitational redshift of z = 3999.* Here the equation that explains the term „z" as a measure of the observed redshift:

$$z = \frac{\lambda_r}{\lambda_e} - 1$$

λ_r *stands for the received wavelength and* λ_e *stands for the emitted wavelength. z is the resulting redshift.*

When we now consider the object with the largest presently observable redshift (*z = 8.2*) and plug this z-value into the equation for determining distances in our universe, we obtain the distance of this object relative to the diameter of the universe. However, the current problem that we are facing is that the actual diameter of the universe is not calculable the total mass of the universe or the value of the gravitational potential of the universe. Do not worry, we will empirically determine the mass of the universe with help of the gravitational potential but for now we take the familiar radius of the universe of 13.7 billion light years. This gives a diameter of 27.4 billion light years. If we plug in the redshift value of *z = 8.2* into the following equation, then we get the distance of the object relatibe to us. Here again the *equation*

for determining distances in our universe:

$$D = \frac{c^2}{g_U} \left(1 - \frac{1}{z+1}\right)$$

The mathematical term „ c^2/g_u " stands for the diameter of the universe, or in other words, the maximum possible distance between two points. Due to the fact, that we at present do not know the actual value of the gravitational potential of the universe (not until later we will derive this value), we take as a basis a diameter of 27.4 billion light years. On this basis the light of an object with a redshift of $z = 8.2$ has travelled exactly 24.42 billion years through our universe until it is finally detected by us. According to calculations based on the Hubble equation, the distance covered by this object would be about 13 billion light years. This is, as we now know, wrong. The fundamentally wrong assumption of a Big Bang permits only distances up to a maximum of 13.7 billion lightyears. An object with a redshift of $z = 8.2$ is in fact about 24.4 billion light years away from our position, assuming a diameter for our universe of 27.4 billion light years. This may seem strange at first glance, but we should not imagine the universe as a globe filled with space in the centre of which once happened the Big Bang. This is an incorrect interpretation because it does not allow an understanding of the real background of the universe. Just imagine our universe as the surface of a globe. Space, time and the mass of our universe figuratively form this „surface". Thus, the universe has an infinite curvature, or in other words, the universe forms a globular sphere. That is what Einstein actually meant when he said that the space of our universe is curved. For example, imagine standing on Earth and being able to look along the surface (past the horizon) of the earth, then, it would be possible to see the diametrically opposite location relative to your current location. The universe must be imagined just like this. When we look deep into the sky, we look along the curved space of our universe and the deeper we look, the more we are visually approaching the opposite position relative to our position. In reality, however, we cannot actually see the precise diametrically opposite point but an almost infinite approximation towards this diametrically opposite point is possible. This can be explained with the help of the *equation for determining distances in our universe*.

$$D = \frac{c^2}{g_U} \left(1 - \frac{\lambda_e}{\lambda_r} \right)$$

If an infinitely long wavelength (equal to an infinite redshift) is substituted for λ_r (that is the received redshifted wavelength), then the fraction λ_e / λ_r tends towards zero, but without ever becoming zero. **Thus, the deeper we look into space the more we have the impression of infinity. When we look into the depths of space, we look asymptotically towards the diametrically opposite point relative to our position, thus, we are actually not able to see the diametrically opposite point itself. It is not possible to observe the back of our own head the deeper we look into space, as supposed by Einstein. Furthermore, the maximum possible distance in the universe is a kind of „time horizon". Nothing that is older than the time expressed by the distance in lightyears can be observed, because it is over and never more detectable!** We have the ability to precisely determine distances in the universe. Well, you could argue that our results refer to the invalid Hubble equation, thus, to an assumed diameter of our universe of 27.4 billion light years. This is of course true, but that will change in the course of this book, because we will definitely define the mass of the universe empirically with help of the gravitational potential of the universe (*Pioneer anomaly*), thus, we are indeed able to determine the actual diameter of the universe. This will also enable us to find the correct solution of Einstein`s field equation. At the moment, we can at least determine the distance that a photon has covered during its journey through the universe, based on the assumed diameter of the universe of 27.4 billion light years. **However, if we set the diameter of the universe to 100 %, then we can calculate the distance the light has covered during its travel through the universe in percent of the diameter of the universe. For this purpose, one does not need the actual mass of the universe. In the case of a redshift of $z = 8.2$, the light has covered a distance of about 89 % of the diameter of the universe.** Even without knowing the actual mass of the universe, we can make such a statement. As already mentioned, we will determine the mass of the universe with the help of the *Pioneer-anomaly* later on.

HOW DEEP CAN WE LOOK INTO SPACE WITH OPTICAL TELESCOPES?

The following statement may astonish some readers. How deep we can actually look into space with an optical telescope does not depend on the size of the optical device or on its light-harvesting capability. For example, the size of the parabolic reflector of a telescope defines the optical resolution capability. Theoretically, one could build optical telescopes which would allow us to clearly recognize even a one-cent piece on the moon. The actual observation limit of optical instruments depends on the wavelength. What does that mean? Well, we now know that the light is influenced by the gravitational potential of the universe. The further we look into space with optical telescopes, the more we detect light which was, due to the distance of the light emitting object, more and more subject to the gravitational redshift of the universe and the more the light waves were shifted toward the long wavelength range of the visible spectrum. For example, the ability to detect light that was emitted from a distant object with a wavelength of 500 nanometers can be observed, with optical devices, as long it is not too much red-shifted. At a specific distance, the emitted visible light of a far-off object with a wavelength of 500 nanometres leaves the visible spectral range due to the gravitational red-shift and enters the infra-red range (IR). We can determine this specific distance mathematically. We will do so now.

Let us first consider the wavelength range of visible light:
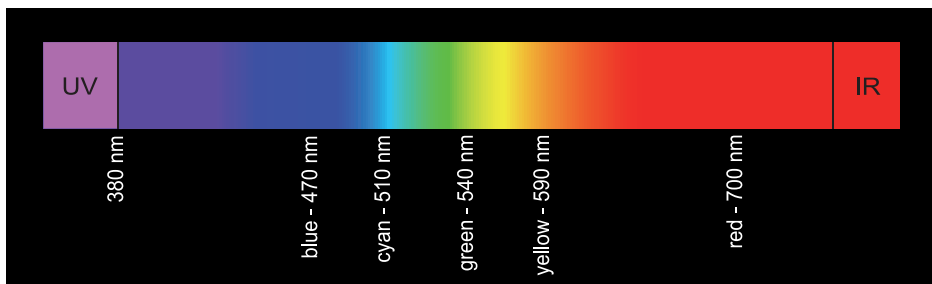
Fig. 61 | Wavelength range of visible light

The threshold wavelength of the longest wavelength of visible light is about 780 nanometres. We take into consideration that an average star has its maximum radiation intensity at a wavelength of about *500*

nanometres (λ_e = emitted wavelength). When we receive this light - redshifted by the influence of the gravitational redshift - in a wavelength range of *780 nanometres (λ_r = received wavelength)*, then we can calculate the amount of the redshift with the following equation:

$$z = \frac{\lambda_r}{\lambda_e} - 1$$

The result is a redshift of *z = 0.56*. According to the following equation, this gives a distance of the observed object to our position of about 36 % of the diameter of the universe:

$$D = \frac{c^2}{g_U} \left(1 - \frac{1}{z+1}\right)$$

Assuming that the diameter of the universe is 27.4 billion light years, we realise that this corresponds to a distance of about *9.84 billion light years*. **This distance defines the threshold for observations of emitted visible light with a wavelength of 500 nanometres by means of optical instruments.** When we look deeper into the space of our universe, we can observe the unvisible ultra violet range of the electromagnetic spectrum, emitted by a far-off object even by means of optical instruments. **Furthermore, it is possible to observe x-ray radiation with optical telescopes if this radiation was emitted about 27.39 billion years ago, thus, if the x-ray radiation travelled through almost the entire universe. What is the essence of this statement? Background radiation is an agglomeration of all wavelength ranges, due to the fact, that we look asymptotically towards the diametrically opposite point relative to our position with the result that all wavelength ranges seem to merge into a background radiation with a wavelength of about 2mm. The closer the observed object the more we detect seperate wavelength ranges.** Interestingly, the calculated distance of an object which was subject to a redshift of z = 0.56 is confirmed by the value calculated via the *luminosity-distance ratio* as well. What does that mean?

Since the luminosity of a light source decreases square of the distance of this particular light source relative to an observer, it is possible - based on the apparent luminosity (magnitude) of the respective light source - to calculate the distance of the light source, if one knows the actual magnitude of this object. According to the erroneous Hubble equation, which is currently being applied as a calculation basis for determining the distances of observed objects, an object with a redshift of *z = 0.56* is located much closer to us. The object would be slightly more than 5 billion light-years away from us, thus, roughly half of the amount calculated with the above equation, and, in addition, it would be half the amount calculated on the reliable basis of the *luminosity-distance ratio*. In order to explain this discrepancy, between the distance calculated on the one hand with help of the *luminosity-distance-ratio* and on the other hand calculated on the basis of the *Hubble equation*, an utterly strange „expansion of the universe characteristic" is introduced, which is akin to an „*overturned beer glass*". The illustration below is based on the usual bending and breaking of the facts in the field of astrophysics to justify the Big Bang theory.
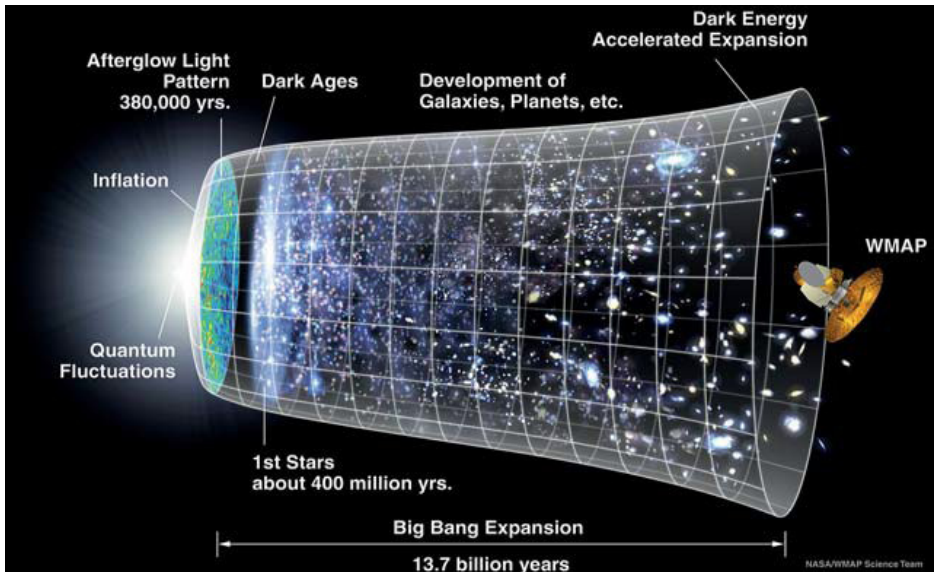
Fig. 62 | The extrelmy naive Big Bang scenario with assumed subsequent expansion of the universe of the Big Bang proponents is akin to an „overturned beer glas".

This „*beer glass*“ is a hilarious joke and has absolutely nothing in common with sound science. It is another example of the impudent tricks used in astrophysics. Dear astrophysicist, you ought to be ashamed of yourself. The whole thing is topped by the recently „identified“ mock gravitational waves from a mock Big Bang. Perhaps the responsible creators of the „*overturned beer glass*“ graphic and the alleged „discoverer“ of the mock gravitational waves of the Big Bang had a drop too much out of such a beer glass as they fabricated the „*cosmic beer glass graphic*“ and guessed they could deduce gravitational waves out of the background radiation.

In the next section, the mass of the universe will be determined empirically by means of the gravitational potential of the universe, which is the value of the Pioneer anomaly. On the basis of the gravitational potential „g_U“ of the universe and by means of the above equation, we are able to determine the extent of the universe and to determine the distances of celestial objects relative to us. At this point, the result of our calculations regarding the extent of the universe, are anticipated. **The actual diameter of the universe is about 22 billion light years (± 15%)! An observed object with a redshift of *z = 0.56* has on this basis a distance of about 8 billion light years (± 15%). No event that is older than 22 billion lightyears can be detected, because its over and lies beyond the „time horizon“ of about 22 billion lightyears. We have to assume, that the universe has been existing from time immemorial. Our look back into the past of our universe finds its end with the detectable *background radiation*, which shows the ancient stars of our universe as they looked like 22 billion years ago. This marks the end of our observable universe. It will be very interesting to discover, how the ancient universe actually looked like.**
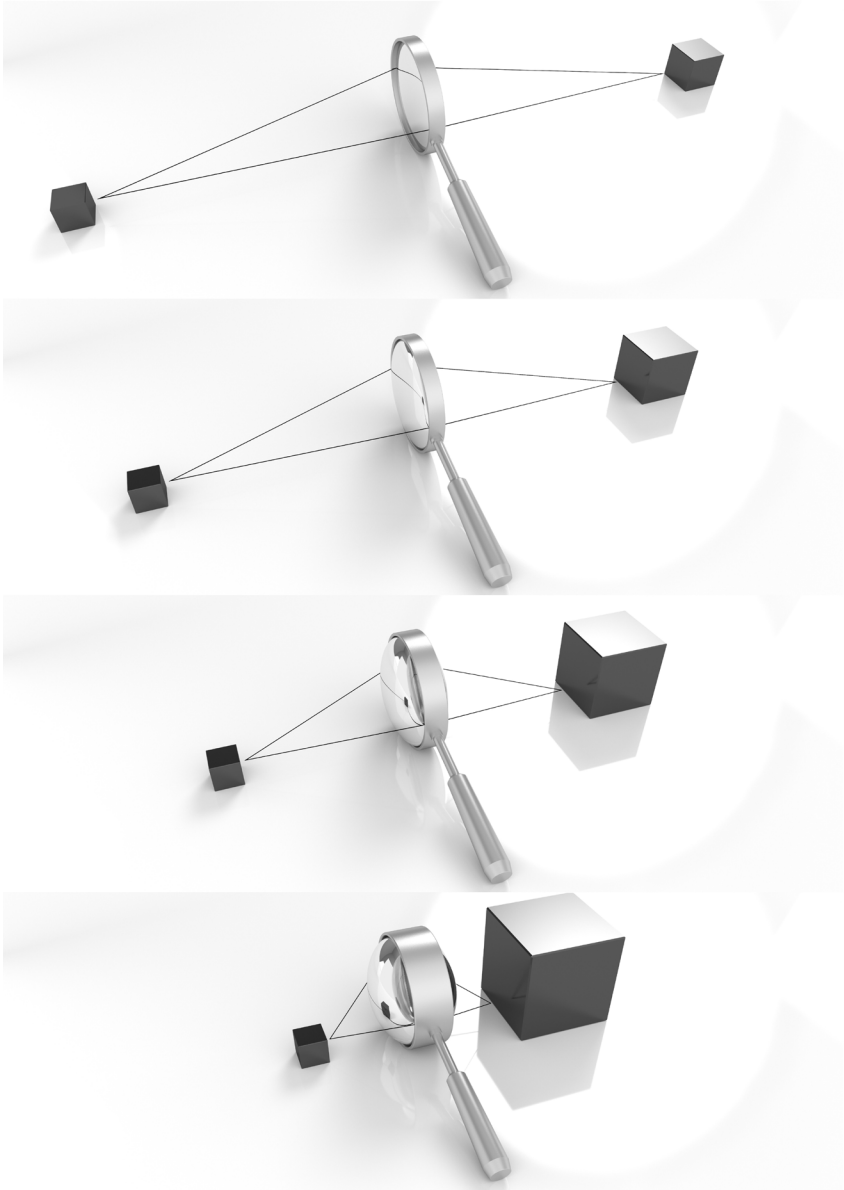
Fig. 63 | Optical magnification by means of different magnification lenses.
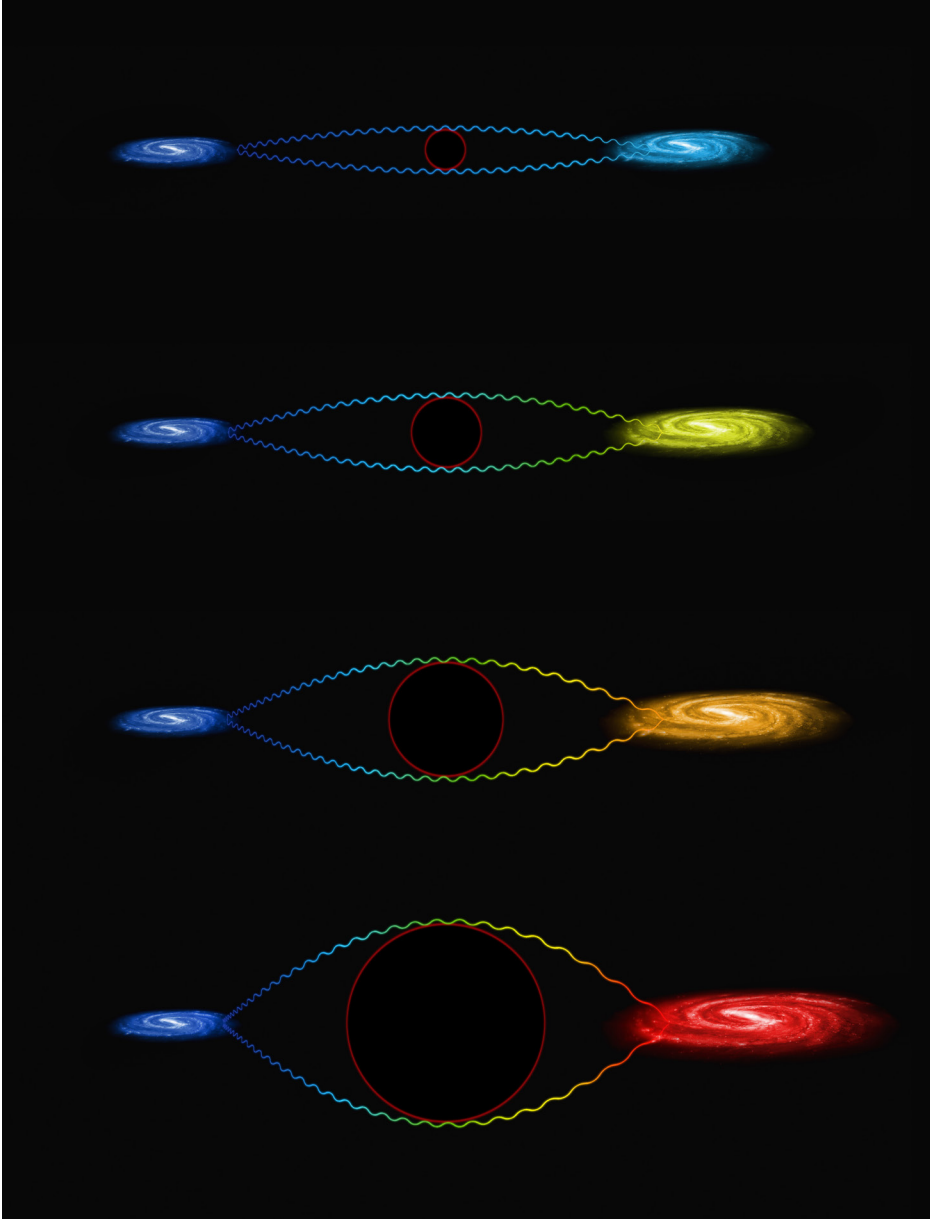
Fig. 64 | The larger a *black sphere*, the more a *black sphere* is able to gravitationally magnify the optical light of objects due to *gravitational lensing*.

GRAVITATIONAL LENSING AND BACKGROUND RADIATION

We have already briefly mentioned the gravitational lensing in this book. A gravitational lens has a similar magnifying effect to the convex shaped lens of a magnifying glass. There is just one important difference. The light of an observed object penetrates the glass lens of a magnifying lens and is refracted and focused. In the case of a gravitational lens this process occurs by the distortion of space. Additionally, a gravitational lens has a *shear effect* because the light does not penetrate the gravitational lens (as is the case with a glass lens) but is led around the *black sphere* due to the distorted space.

Each *black sphere* has the capability of magnification, even our universe, which has to be considered as a superlarge *black sphere*, shows this magnifying effect. The universe is essentially the biggest possible *black sphere*! **Thus, the universe has an intrinsic magnification capability. The radiation that we detect in form of background radiation is not simply the gravitationally red-shifted light emitted by stars which are figuratively located diametrically opposite to us. Additionally, the light has been subject to an enormous time dilation (about 4000 times) and allows us to watch a 4000-fold magnified image of a small area of the universe located opposite to us. Due to the background radiation, we have the unique opportunity of observing the ancient history of a magnified small area of the universe, as if Mother Nature had chosen to pinpoint details of our universe particularly to facilitate our observations and had even decided to present these early events in slow motion.** This is a truly amazing fact and much more impressive than the Big Bang nonsense.

We already pointed out that background radiation is the light of the ancient stars that covered about 99.9975 percent of the diameter of the universe. If we equate the entire universe with 100 percent, then the section of the universe which is accessible to us by means of the background radiation corresponds to 100% minus 99.9975%, i.e. to 0.0025% of the entire universe. We can observe this very small part of the universe as a 360° projection onto our entire celestial vault because we detect the background radiation from all directions (**see fig. 81, item 21, appendix**). This, in turn,

corresponds to an approximately 4000-fold magnification of the small section diametrically opposite to our position. **Thus, the universe acts as a high power telescope with a 4000-fold magnification capability. This is unbelievable, is it not? By means of background radiation, we have the opportunity of conducting a 22 billion year-old review. Furthermore, during its long journey through the universe the light was subject to a 4000-fold time dilation, which allows us to observe processes (events) of the ancient universe in extreme slow motion, events which actually happened 22 billion years ago**!

However, this incredible insight is completely veiled by the Big Bang theory. Perhaps now you recognize the huge potential of background radiation research. This incredible potential, which can increase our knowledge of the universe and its early state tremendously, is presently hidden due to the Big Bang theory. **So-called "astrophysicists" actually wanted to tell us that they had observe the echo of a supposed Big Bang in the form of gravitational waves. This is not only complete nonsense, but a huge, ridiculous deception manoeuvre in the form of an actual duping of mankind and, indeed, prevents scientific progress in the field of cosmology and even the educational progress of mankind.** Such action has nothing in common with science but is rather a source of shame. It is not only stupid to keep the Big Bang theory alive but it impedes science as well. Dear cosmologists, do you really want to be guilty of such shameful behaviour and appear stupid to succeeding generations in retrospect? Go ahead but truth always prevails!

Stop telling people tales about the Big Bang, the theory of superluminal cosmic inflation of space, about gravitational waves allegedly originating from a mock Big Bang, the dark forces of the universe, wormholes, and singularities. This all is esoteric nonsense.

Stop deceiving mankind

DETERMINATION OF THE MASS OF THE UNIVERSE BY MEANS OF THE PIONEER ANOMALY

The *Pioneer anomaly* is an deceleration effect on the Pioneer probes 10 and 11. This effect had been discussed and finally one arrived at the conclusion, that the alleged cause of this deceleration effect is a „*thermal radiation pressure forces inherent in the spacecraft*". Great! Now everything is fine. However, this is a typical example of deception or dilettantism, as it is common practice in the field of cosmology. In actual fact, nobody has not the faintest idea of the real origin of the *Pioneer anomaly.* Of course, if one believes in a Big Bang, the *Pioneer anomaly* seems to be a strange and allegedly unexplicable effect. In the course of this book we already recognised, that the *Pioneer anomaly* is a consequence of the gravitational potential of the universe, a universe with a firmly defined mass, and a firmly defined extent. Thus, if we know the specific mass of the universe, we can determine the actual spatial extent of the universe. Einstein was already aware of this fact which is clearly apparent from Einstein`s field equation, the equation that we will discuss in more detail in the next section. Due to the fact that we did not know the specific mass of the universe, yet, all assumptions regarding the actual spatial extent of the universe were not really established. Until now, nobody has known the mass and, therefore, the spatial extent of the universe. How is it possible to determine the specific mass of the universe? With the help of a huge scale? Surely not. **NASA enables us to determine the specific mass and, thus, to determine the spatial extent of the universe. However, NASA is not even aware of this fact. Nevertheless, for this incredible feat of engineering, NASA does truly deserve a Nobel Prize, based on real skills and not on spasmodic attempts to integrate esoteric concepts in the cosmological field! Such a Nobel Prize would be a really reputable appreciation for the extraordinary accomplishments of the fantastic NASA engineers. There is a fantastic way for determining the mass of the universe. This is possible with the help of a mysterious phenomenon, which still causes shrugs and astonishment among astrophysicists.**

In March of 1972 and in April of 1973, two satellites were launched to explore the planets of the outer solar system: *Pioneer 10* and *Pioneer*

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11. The identical satellites were sent on a very long space trip and sent signals to Earth for far longer than this was originally planned. The program was a resounding success and a brilliant performance by many engineers and specialists under the auspices of NASA. However, nobody could predict at this time that these two satellites are still contributing to a fundamental change in cosmology. Using these two technological marvels it is possible to calculate the total mass of the universe. How can this be done?

After *Pioneer 10* and *Pioneer 11* had left the disturbing influence of the solar system behind, it was discovered that both satellites were decelerated by an unknown force (do not worry, it was not a dark, mystical force). No satisfactory explanation for this phenomenon could be found (currently it is pretended that thermodynamic effects would lead to a deceleration of the probes what is indeed pure nonsense). What is even more odd is the circumstance that this anomaly affects both satellites equally, although they left the solar system in opposite directions and are, thus, very far apart from each other. The amount of deceleration affecting these two satellites differs only in the range ±3%.

The amount of deceleration of the two satellites is about **8.74…±1.31 · 10^{-10} m/s^2**. We already encountered a similar g-value in the course of this book. We determined a g-value of the universe on the basis of an assumed radius of the universe of 13.7 billion light years and an estimated mass of the universe of about 8.7·10^{52} kg.

$$g_U = \frac{GM_U}{r_{SU}^2} = 3.472 \cdot 10^{-10} \, ms^{\;2}$$

We chosed these two assumed estimated values because they are familiar to us. As we already know, the universe does not only have a decelerating effect on light but on everything that moves within the universe as well. Of course, this decelerating influence affects the two Pioneer satellites in addition. The two satellites are moving through the gravitational field of the universe which de facto leads to a deceleration and, thus, the two satellites are gradually losing energy and changing their flight path. **The two Pioneer satellites are actually decelerated**

by the mass of the universe, i,e. by the gravitational potential of the universe. Thanks to the terrific idea of NASA executives to send two identical satellites into the vastness of the universe, we now have a fairly empirically ascertained g-value of our universe. This circumstance is really a godsend for cosmology.

MANY THANKS TO NASA! NASA provided an unexpected means of immense importance for our understanding of the universe. NASA has accomplished numerous feats, however, with *Pioneer 10* and *11* the engineers gave us the basis for calculating the actual mass and spatial extent of the universe. To be able to calculate the mass of the universe by means of the g-value of the universe, we simply need two equations, the *Schwarzschild radius equation* and *Newton's law of gravitation*.

$$r_S = 2\frac{GM}{c^2} \qquad\qquad g_U = \frac{GM_U}{r_{SU}^2}$$

From this it follows:

$$M_U = \frac{c^4}{4G\,g_U}$$

This simple equation does not only enable us to determine the mass of our universe, but it is the missing piece of the puzzle in order to determine Einstein's cosmological constant as well and helps us to solve Einstein´s famous field equation. However, we will explain this topic in the next chapter of this book. When we plug the value of the Pioneer anomaly *(g_U=8.74…±1.31·10 $^{-10}$ m/s²)* into the equation derived above the resulting mass of the universe is *3.473 · 10⁵² kg* with an accuracy of ± 15%. This is a sensation! For the first time we are able to empirically determine the mass of the universe with the help of the empirically ascertained deceleration values of *Pioneer 10* and *11*. If we also plug this mass into the Schwarzschild radius equation, we obtain the actual radius

of the universe with an accuracy of ± 15%. Thus, the respective diameter of the universe is about 22 billion light years (± 15%).

Combining the equation to determine the mass of the universe:

$$M_U = \frac{c^4}{4G\,g_U}$$

with the Schwarzschild radius equation:

$$r_S = 2\frac{GM}{c^2}$$

the result is the following equation:

$$r_S = \frac{c^2}{2g_U}$$

Since the diameter of the universe „D_U" is twice the Schwarzschild radius „$2\,r_{su}$" from this it follows:

$$D_U = \frac{c^2}{g_U}$$

„g_u" stands for the value of the *Pioneer anomaly*. This enables us to express the equation for determining the distances of objects in the universe as a function of the *Pioneer anomaly* „g_u".

$$\frac{4GM_U}{c^2}\left(1 - \frac{\lambda_e}{\lambda_r}\right) = D = \frac{c^2}{g_U}\left(1 - \frac{\lambda_e}{\lambda_r}\right)$$

This allowes us to express „D" (Distance) in the above equation, which allows us to determine distances of celestial objects relative to us, as a function of „z" (redshift factor):

$$D = \frac{c^2}{g_U}\left(1 - \frac{1}{z+1}\right)$$

The term „c^2/g_u" is a divinely simple term for expressing the diameter of the universe. The diameter of the universe can actually be determined with the help of the *speed of light* and the *Pioneer anomaly*. The executives of the Pioneer missions, of course, could not have been aware that they had created the basis for the empirical determination of the mass and extent of the universe about 42 years after the launch of the Pioneer satellites. We cannot thank them enough. However, since we now have this information we should quite quickly intensify our efforts to measure the g-value of our universe as precise as possible. This will then enable us to determine the mass of the universe and, thus, its diameter more accurately.

However, the *Pioneer anomaly* holds yet another surprise in regard to Einstein's field equation.

EINSTEIN'S COSMOLOGICAL CONSTANT AND THE SOLUTION OF EINSTEIN'S FIELD EQUATION

Einstein's general field equation is as follows:

$$G_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu} + g_{\mu\nu} \cdot \Lambda$$

By means of this equation Einstein attempted to describe that the universe is a static universe, or a so-called "steady state" universe that neither expands nor contracts. Einstein had the idea that the mass of the universe would tend to agglomerate, if their wouldn´t exist any kind of „repellant force" in order to stabilize the universe. However, Einstein´s idea was basesd on a wrong assumption. Gravitation does not matter! When we imagine that the entire mass of the universe would agglomerate and formed a single object, this would **not** influence the extent of the universe, indeed! The extent of the universe is solely defined by its *mass*, the *gravitational constant* and the *speed of light*, as we have ascertained in the chapter: „*The equivalence of mass and space*".

However, in order to understand Einstein's approach, we have to follow his logic, thus, the logic of a balance between two conteracting forces keeping the universe steady. First of all, we have to imagine that our universe is nothing but a *black sphere.* In order to fully understand the prinziple of our universe, we notionally have to leave the space-time structure of our universe, thus, we have to enter a kind of „fifth dimension" (the first to the third dimensions represent the spatial dimensions length, breadth, height and 4th dimension is time). Just imagine that our entire universe, notionally observed from the „outside", forms a sphere. However, our universe is not located „inside" this sphere but rather forms the surface of this sphere. Thus, „inside" this sphere, there is neither space nor time nor mass. The same applies to „outside" this sphere. We cannot even speak of an „inside" or an „outside" because these terms are only applicable within a spatial world. Thus, we have to consider the seemingly unlimited space of the universe as a completely flat „layer" or „membrane", forming a kind of „globe". To us the universe appears to be

endless, because there is no edge or wall that can be reached. Just imagine the universe as a soap bubble, accordingly the space of the universe corresponds to an infinitely thin soap membrane. The imagined concept of a globular universe conforms to Einstein´s interpretation regarding the universe. When a surface is infinitely curved it forms ideally a sphere, like a globe. Einstein claimed that space is curved. It is amazing that at the beginning of the last century Einstein already had such a far-sighted and correct vision of our universe. Yet the deck was unfairly stacked against Einstein. He felt compelled not to speak out against the Big Bang theory obviously due to political circumstances. Until the end of World War II, one really did not have the best of hands if one were German and Jewish. Einstein had to compromise and deal with powerful people and institutions if he wanted to survive, which might explain Einstein's passiveness in respect of the Big Bang theory and likewise in respect of a non-static, expanding universe. Einstein was never a passionate proponent of the Big Bang theory. His calculations and his deepest conviction that the universe is a staedy state universe (as demonstrated by his field equation) are testament to this. Einstein did not contradict the Big Bang theory but this must not be misinterpreted. Einstein was strictly against the Big Bang theory. He was simply isolated from the scientific discussion.

Returning to our topic, imagining the universe as a non-expanding and non-shrinking globular According to Einstein, the extent of the „universal sphere" is defined by three factors:

- **the mass of the universe**
- **the gravitational constant**
- **the speed of light**

According to Einstein´s logic it is necessary that there are two balanced forces in order to keep the universal sphere steady. One force „F" is the gravitational force of the universe „G_U", which results from multiplying the mass of the universe „M_U" by the g-value of the universe „g_U" (Pioneer anomaly, i.e. gravitational potential of the universe):

$$F = M_U \cdot g_U = G_U$$

Thus, „G_U" corresponds to the gravitational force of the universe. If, in accordance with Einstein´s idea, this gravitational force acted alone then the universe would shrink, resulting in its collapse. The universe would be unstable. At this point , we should point out again that this notion is somewhat simplistic. It is, in fact, irrelevant whether mass is concentrated by mutual gravitational attraction or not. This has, according to the *mass-space equivalence*, no influence on the extent of the space of our universe. Thus, whether the mass of our universe is concentrated or not has absolutely no influence on the extent of our universe. According to the *mass-space equivalence*, **the extent of our universe is only defined by its mass, the** *speed of light* **and the** *gravitational constant.* However, in order to understand Einstein's field equation, we will follow the applied logic of Einstein. Hence, according to Einstein, there must be a counteracting force which acts in the opposite direction to the gravitational force of the universe in order to „stabilize" the universe, akind of „repulsive force".

We can easily formulate this in the following way:

$$G_{Ui} = G_{Uo}$$

„G_{Ui}" corresponds to the „inbound" force of the universe („i" stands for inbound) and „G_{Uo}" corresponds to the „outbound" force of the universe („o" stands for outbound). This mathematical statement is the simplest expression of *Einstein's field equation*. Now, we compare this simplest expression of Einstein´s field equation with *Einstein's general field* equation. Again, here is Einstein's field equation:

$$G_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu} + g_{\mu\nu} \cdot \Lambda$$

The statement of this equation becomes clear when one understands the meaning of the terms „$T_{\mu\nu}$" and „ Λ ". There are many mathematical interpretations of these terms but, nevertheless, a large question mark remains, as these interpretations are based solely on conjecture or on the dubious *Friedmann equation* (we will analyse this equation later on).

However, this is what makes the Einstein field equation so interesting. Einstein`s intention was to find the simplest and most coherent solution to a problem. Highly complex attempts for explaining the nature of things were repugnant to his deepest conviction that the laws of God are simple and accessible to everybody (and not only to a set of „illuminated" swindlers). Next, we will apply Einstein's method to unravel the greatest mystery of so-called „modern cosmology" in a simple and consistent manner. We will do this by means of the already derived equation for determining the mass of the universe. The following equation is a function of the Pioneer anomaly; it defines the mass of the universe on the basis of the Pioneer anomaly which is the gravitational potential of our steady universe. We can easily see that the mass of the universe „M_U" depends solely on the *gravitational potential of the universe „g_U"*, the *speed of light „c"* and the *gravitational constant „G"*.

$$M_U = \frac{c^4}{4G\,g_U}$$

Einstein's field equation tells us that the „counteracting forces" are balanced and the totality of the two forces must be zero:

$$G_{Utot} = G_{Ui} - G_{Uo} = 0$$

„tot" means totality and „G_{Utot}" stands for the totality of the two counteracting forces which must be zero, according to Einstein's idea of a steady universe.

Based on this central aspect, we will now check Einstein's field equation. The terms placed in designated brackets indicate that we are dealing with a more detailed form of Einstein´s field equation:

$$(G_{\mu\nu})_{Utot} = \left(\frac{8\pi \boldsymbol{G}}{\boldsymbol{c^4}} T_{\mu\nu} \right)_{Ui} + (- g_{\mu\nu} \cdot \Lambda)_{Uo} = 0$$

According to Einstein´s logic, the term $\left(\frac{8\pi G}{c^4} T_{\mu\nu} \right)_{Ui}$ expresses the „inbound" gravitational force „G_{Ui}" of our universe. The bold faced term $\frac{\boldsymbol{G}}{\boldsymbol{c^4}}$ is the inverse of the term $\frac{\boldsymbol{c^4}}{\boldsymbol{G}}$ and as such this term is an expression of the physical unit force, i.e. $\frac{m}{s^2} \cdot kg$. The term $\left(\frac{8\pi G}{c^4} T_{\mu\nu} \right)_{Ui}$, therefore, expresses the „inbound" gravitational force of our universe according to Einstein. We will determine what the term $T_{\mu\nu}$ stands for in order to express the term $\left(\frac{8\pi G}{c^4} T_{\mu\nu} \right)_{Ui}$ as a gravitational *inbound force* later on. We will now consider the next term in brackets. The term $(- g_{\mu\nu} \cdot \Lambda)_{Uo}$ expresses the „*repellent force*" to the „*inbound gravitational force*", according to Einstein´s logic, and results from substituting the mass of the universe for „Λ" (known as cosmological constant) and the g-value (Pioneer anomaly) of the universe for $g_{\mu\nu}$. In Einstein´s era, the mass and the g-value of the universe remained unknown. Einstein´s *cosmological constant* „Λ" couldn´t actually stand for a real mass (so, he couldn´t call it a mass), but for something unknown, that multiplied with $g_{\mu\nu}$ results in a „repellent force". This in turn means, that Einstein´s *cosmological constant* was indeed not his „biggest blunder" but a logical consequence of his interpretaion. However, this „something" is just a fiction, as we already know, because an „repellent force" does not exist in reality. The universe is stable in itself due to the *equivalence of mass and space*. Nevertheless, let us follow Einstein´s logic. **The g-value of the universe has now been empirically determined, curtesy of NASA, by means of Pioneer 10 and 11. This is an invaluable discovery and is certainly worthy of a Nobel Prize in its own right.** Now, we have almost discovered the essence of Einstein´s field equation. We merely need to know what we have to substitute $T_{\mu\nu}$ with so that the term $\frac{8\pi G}{c^4} T_{\mu\nu}$ makes sense in respect of Einstein´s idea of a *steady state universe*.

We know that the mass of the universe can be determined by the

following equation:

$$M_U = \frac{c^4}{4G\,g_U}$$

If we substitute the above expression for „M_U" in the following equation:

$$G_{Ui} = M_U \cdot g_U$$

we arrive at this equation:

$$G_{Ui} = \frac{c^4}{4G\,g_U} \cdot g_U = \frac{c^4}{4G}$$

The term $\frac{8\pi G}{c^4}T_{\mu\nu}$ only simplifies to $\frac{c^4}{4G}$ if we use the following concept for $T_{\mu\nu}$:

$$T_{\mu\nu} = \frac{c^8}{32\pi G^2}$$

Consequently, we can solve Einstein's field equation, mutatis mutandis:

$$(G_{\mu\nu})_{Utot} = (\frac{8\pi G}{c^4}\frac{c^8}{32\pi G^2})_{Ui} + (-g_{\mu\nu} \cdot M_U)_{Uo} = 0$$

The solution of Einstein's general field equation results from this equation and can be called Einstein's special field equation. This equation expresses the steady extent of our universe from Einstein's point of view:

$$(G_{\mu\nu})_{Utot} = (\frac{c^4}{4G})_{Ui} + (- g_{\mu\nu} \cdot M_U)_{Uo} = 0$$

$g_{\mu\nu}$ *corresponds to the Pioneer anomaly*

Some very revealing information can be found in this equation. The speed of light „c" and the gravitational constant „G" are, so to speak, the „adjusting screws of God", defining the extent of the universe. This is truly remarkable and shows the fundamental importance of the natural constants and most of all, that these constants are valid throughout the universe. There are some „super intelligent scientists" who regard the natural constants „c" and „G" as variables. Against this stupidity God himself struggles in vain. It is striking that the term $- g_{\mu\nu}$ has a minus sign. This means that the term $(- g_{\mu\nu} \cdot M_U)$ is, according to Einstein´s logic, the „repellent force" counteracting against the gravitational force and can be denoted as a kind of *„anti-gravitational force"* of the universe. According to this logic, our universe can neither shrink nor expand, due to this „force". Again, this is a somewhat simplistic interpretation, because there is no actual force that compensates the gravitational force of the universe. The universe is in fact „automatically" steady and this is explained by the already derived equation of the *mass-space equivalence*. We will go on with our simplistic approach because Einstein followed this logic. The magnitude of the gravitational force and its opposing „repellent force" is about $3 \cdot 10^{43} \frac{kgm}{s^2}$.

This corresponds to a force of:

30000000000000000000000000000000000000000000 N (Newton)

In other words, the „force" which „prevents" a collapse of the universe , thus, the „force" that „keeps the universe steady" has a magnitude of about 30 million billion billion billion billion newton. Again, this „force" is a fictitious force. By way of comparison, a person with a mass of 80 kg is attracted by earth with a force of about 800 N. However, the „repellent force" arises from Einstein´s logic. In reality the equivalence of mass and space „prevents" the collapse of our universe so to say „automatically". We can say: God himself

decided to do it this way and we never are able to know why God did it this way because the answer of this question is beyond empirical research. There is no alternative to a steady state universe. Again, „repellent force" does not exist in reality. This force only arises due to Einstein's notion. Physical forces, regardless of the gravitational force or a fictional repellent force, are not at all influencing the extent of the universe. We already know that the extent of our universe depends solely on its *mass*, the *speed of light* and the *gravitational constant* and nothing else. Consequently, it is irrelevant whether the entire mass of the universe is agglomerated in the form of a single object or not! This is a direct consequence of *mass-space equivalence.* We have already postulated the axiom of *mass-space equivalence* in this book. This *mass-space equivalence* is not a fairy tale belonging to the world of goblins and fairies but can be proven by a detailed analysis of *background radiation* and the *Pioneer anomaly*. Thus far, *mass-space equivalence* has not been recognized by so-called „modern cosmologists" because the preference of the mainstream scientists is to postulate one nonsensical idea after another. As long as the preference for an unscientific approach to astrophysics continues, no progress in cosmology will be possible. In fact, the opposite applies. If astrophysicists continue along this path, it will inevitably lead us straight back to a medieval world of mysticism!

Since *Lemaitre, Chandrasekhar* and *Gamow* brought their ideas into the world, the path of empirical science has changed drastically for the worst. This act shames the entire astrophysics community and will soon become apparent to everybody. The proponents of Big Bang have reason to be afraid of the next generation of satellites and of ALMA. These devices will provide very high definition images of background radiation. Finally, the entire Big Bang theory and a whole string of other nonsensical theories will collapse and the fraudulent postulation of so-called "gravitational waves" from a „so-called Big Bang" will become apparent.

THE FUTILITY OF THE FRIEDMANN EQUATION AND THE ENERGY DENSITY OF THE UNIVERSE

In so-called „scientific literature", one finds the following equation which results from the so-called *Friedmann equation*.

$$\left(\frac{E_U}{V_U}\right)_{crit} = \rho = \frac{c^4}{8\pi G}\Lambda$$

The Friedmann equation expresses a specific relation between the cosmological constant „Λ" and the so-called "*critical energy density* $\left(\frac{E_U}{V_U}\right)_{crit}$ of the universe. This interpretation does not at all comply with the interpretation of Albert Einstein. The Friedmann equation was postulated by the Russian physicist *Alexander Friedmann*. Friedmann did not agree with Einstein's field equation (whyever) which explicitly describes a steady – neither expanding, nor shrinking - universe. Friedmann formulated an equation that effectively keeps all options open regarding the „evolution" of the universe, depending on whether a so-called „*critical energy density*" of the universe is exceeded or not. Depending on the „actual" value of the cosmological constant „Λ", i.e., depending on the value of the „actual energy density", there are, according Friedmann´s equation, three options regarding the further development of the universe: everlasting expansion of the universe (assuming that there actually was a Big Bang); expansion to a limit and then ceasing of expansion, or subsequent shrinking of the universe to finally create a new Big Bang. The following graphic illustrates these three options. All three options make the common assumption that there was a Big Bang at the beginning. This can be seen in the graphic by the fact that all three graphs begin at the origin of coordinates, thus, at zero (0/0).
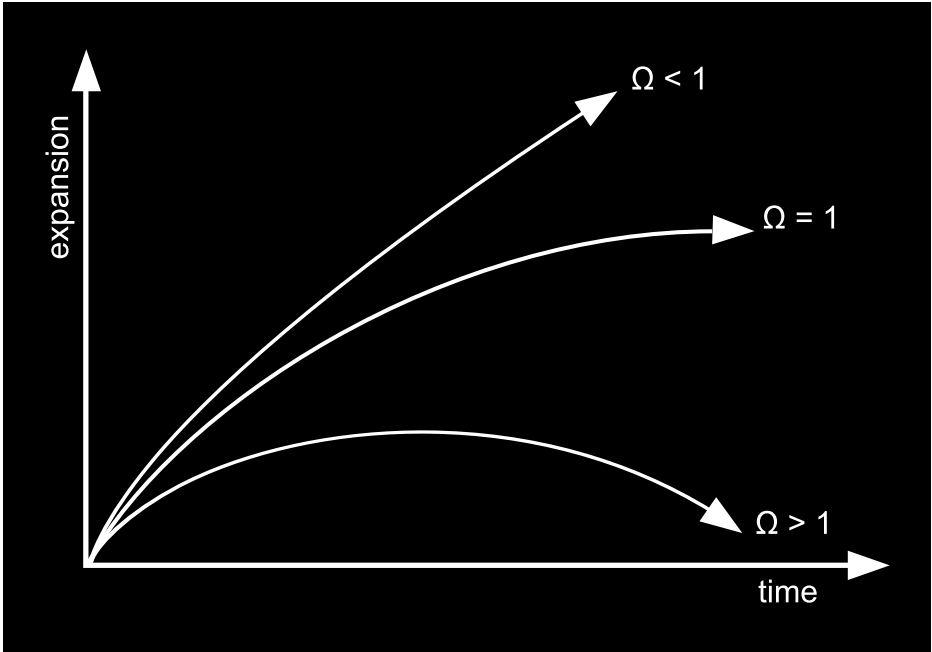
Fig. 65 | The ratio of the „actual energy density" of the universe to the „critical density ρ" of the universe is denoted by „Ω". In the case of Ω > 1, the universe would one day shrink (supposing that a Big Bang really happened!), in the case of Ω = 1, the expansion of the universe would eventually come to a stop and in the case of Ω <1 the universe would expand eternally. The Friedmann equation suggests these options, although they do not exist in reality due to the fact that a Big Bang never occurred. As a result of mass-space equivalence, the energy density of the universe is inevitably predefined and, thus, the universe is „automatically" stable. Any other option simply does not exist. The energy density of the universe was never less than it is at the present time, nor will it ever be larger than it is now! This fact is expressed by Einstein's field equation and the mass-space equivalence equation. Thus, the Friedmann equation is completely pointless.

According to the Friedmann equation, the mathematical term $\frac{c^4}{8\pi G}\Lambda$ corresponds to the so-called "*critical energy density*" and the cosmological constant „Λ" defines the magnitude of the „*critical energy density*". This „*critical energy density*" is the critical parameter in defining the three „possibilities" of a future shrinking universe, a future coming to a standstill universe and a future forever expanding universe. All options have in common that the universe began with a Big Bang. However, Einstein never had this kind of interpretation in mind. Therefore, the Friedmann equation was very questionable to Einstein (he found it dubious) as it was contrary to Einstein's firm conviction that the universe has been steady since ever. The Friedmann equation is a type

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of „imposter Einstein field equation" which was modified in such a manner that it could later be conveniently used to „substantiate" the Big Bang theory. Friedmann´s equation is preferred by the majority of the cosmologists because it plays perfectly into the hands of the Big Bang proponents. This equation leaves the door open for the option of an evolving, dynamical universe. Thus, it is understandable that the Big Bang proponents favour the Friedmann equation. Einstein disliked this equation as it was in strong contrast to his innermost conviction of a steady universe. Einstein´s field equation is an attempt to explain the unchangeable, firmly defined „globular shape" of the universe.

One has to consider that Einstein did not know the facts which are nowadays available to us such as the background radiation and the Pioneer anomaly. Nevertheless, Einstein knew more about the universe than all his contemporaries. The derivation of the *universal distance equation* $D = \frac{c^2}{g_U}\left(1 - \frac{\lambda_e}{\lambda_r}\right)$, the *equation for determining the mass of the universe* $M_U = \frac{c^4}{4 G g_U}$ and the derivation of the *equation of mass-space equivalence* $V = \frac{4}{3}\pi\left(\frac{2GM}{c^2}\right)^3$ are only possible if one consistently implements Einstein's idea of a steady universe. According to Einstein's field equation, the universe has a firmly defined mass, a firmly defined energy content, a firmly defined volume and, thus, a firmly defined energy density. In this context, the term energy density refers to the total amount of energy of the entire universe divided by the volume of the entire universe. This is of course a firmly defined value which is unchangeable and precisely determinable by the equation of *mass-space equivalence*. This fact allows no options.

The extent of the universe is automatically „predetermined" by its *mass*, the *speed of light* and the *gravitational constant*. Of course, the energy density of a steady universe has a very specific and never changing value and is not variable at all. However, the Friedmann equation suggests that different options would exist depending on the „actual" energy density of the universe. Hence, the term $\left(\frac{E}{V}\right)_{crit}$ that should lead us to believe there might exist values above or below this „critical energy density". However, these options do not exist in the real world and, thus, the Friedmann equation is not a viable option but is rather invalid and should be thrown into the same trash can where we can also find the Kerr-Metrik and the Chandrasekhar Limit. To precisely determine the energy density of our universe, we

need the derived *mass-space equivalence equation*:

$$V_U = \frac{4}{3}\left(\frac{2GM_U}{c^2}\right)^3 \pi$$

According to $E = mc^2$, the equation for determining the volume of the universe „V_u" - on the basis of the mass of the universe „M_u" - can be expressed in the following way:

$$\frac{E}{V} = \frac{3}{4}\left(\frac{c^8}{8G^3 M_U{}^2 \pi}\right) = \rho$$

This is the equation for determining the energy density of the universe as a function of the mass of the universe „M_u".

Since $M = \frac{c^4}{4G g_U}$, we can also write:

$$\left(\frac{E}{V}\right)_{crit} = \frac{3}{2}\left(\frac{g_U^2}{G\pi}\right)$$

This is the equation for determining the energy density of the universe as a function of the g-value of the universe „g_u" (Pioneer anomaly).

Due to the fact that currently everything possible is being done to keep the fallacious Big Bang theory alive, one finds, as already mentioned, in so-called „scientific literature" the following interpretation of Einstein´s cosmological constant in accordance with the fallacious Friedmann equation:

$$\left(\frac{E_U}{V_U}\right)_{crit} = \rho_{crit} = \frac{c^4}{8\pi G}\Lambda$$

If it is desired to use this equation in order to determine the actual energy density of the universe, then the following mathematical expression for „Λ" (cosmological constant) must be used:

$$\frac{3}{4}\,\frac{c^4}{G^2 M^2} \triangleq \Lambda$$

From which we obtain:

$$\frac{E}{V} = \rho = \frac{c^4}{8\pi G}\cdot\Lambda = \frac{c^4}{8\pi G}\cdot\left(\frac{3}{4}\frac{c^4}{G^2\boldsymbol{M}^2}\right)_\Lambda = \frac{3}{4}\left(\frac{c^8}{8G^3\boldsymbol{M}^2\pi}\right) = \left(\frac{E}{V}\right)_{crit} = \frac{3}{2}\left(\frac{\boldsymbol{g}_U^2}{G\,\pi}\right)$$

Einstein, however, never had the above interpretation of the cosmological constant in mind. When Einstein began to derive his field equation his understanding was that the universe is a steady state universe and he did not allow for any other interpretation. Therefore, he formulated the field equations as he did and, therefore he was at no time a supporter of the Big Bang. Contrary statements are wrong.

THE ENERGY DENSITY OF THE UNIVERSE AND THE PIONEER ANOMALY

The volume of a specific mass defines its g-value at its surface. This g-value defines the ability to attract other masses. The mass of our universe is distributed within an unchangable, firmly defined volume, thus, the universe has an unchangable, firmly defined g-value, which is well known to us, the *Pioneer anomaly*. As we now know, we can indeed determine the energy density of the universe with the help of the *Pioneer anomaly*:

$$\left(\frac{E}{V}\right)_U = \frac{3}{2}\left(\frac{g_U^2}{G\,\pi}\right) = \textit{energy density of the universe}$$

When the value of the *Pioneer anomaly (8.74 · 10⁻¹⁰ m/s²)* is substituted for g_U, the result is the actual energy density of the universe. Here is the value of the energy density of the universe based on the Pioneer anomaly.

$$5{,}47 \cdot 10^{-9}\,\frac{kg}{m\,s^2} = 5{,}47 \cdot 10^{-9}\,\frac{Joule}{m^3} = 0{,}00000000547\,\frac{Joule}{m^3}$$

Effectively, the universe contains this energy density in itself and is, therefore, steady without further action, without nonsensical dark forces or dark energies or any other nonsensical „effects"! One could say that God has purposely set it up this way. If one wants to know why God did it this way, one will have to ask him. It can be assumed that God probably had his reasons because otherwise we could not ask any questions. Whether our existence is felicitous or not, is not the subject of this book. Incidentally, some scientists actually misuse their academic position in order to try to „empirically" refute the existence of God. One of these scientists is Stephen Hawking. His dubious intention has nothing in common with sound science and he seems to confuse science with religion. A scientist is not a priest. In order to refute the existence of God, it is necessary to define the term „God" first of all, thus, to define that what is intended to be refuted. If one defines „God" with the term *everything* or *all-embracing*,

then God exists because we exist and everthing exists. Thus, God is logically proven. Mr. Hawking, what´s the problem? Let us return to our topic. 100 years ago Einstein was convinced, beyond any doubt, that the universe is steady. Hence he formulated his field equation to describe a steady universe. However, when a Big Bang is constantly postulated then the result is that the simple yet highly important findings, worked out in the course of this book, can not be recognized. The astrophysical science is lost in the deepest darkness of mysticism. That is why we are left completely blind to the phantasic information we can receive with the help of background radiation and Pioneer anomaly. Einstein was indeed correct when he postulated a steady state universe. It is quite remarkable that Albert Einstein was very close to the solution describing the dynamics of the universe. Alongside Einstein, tribute must be paid to Karl Schwarzschild as well. Tragically, cosmology is completely on the wrong track since the postulation of a Big Bang and the postulation of „black holes" and many other absurdities. Thanks to the ingenious idea of NASA to shoot two identical Pioneer satellites into space, it is now possible to get off this wrong track.

Thus, delusions and confusions of so-called „modern cosmology", that have lasted for more than 80 years, should be truly at an end. It should be noted that it was a certain Mr. Gamow who claimed that Einstein confessed to him on a walk to having committed an error with adding the cosmological constant to his field equation. This statement is based only on Gamow and borders on slander. We already know Mr. Gamow as the supposedly „brilliant" physicist who wanted to calculate the value of background radiation on the basis of the Big Bang theory, thus, based on an expanding universe and, of course, he was completely mistaken because he had completely misunderstood the true origin of background radiation.

TIME DILATATION CAUSED BY THE GRAVITATIONAL POTENTIAL OF THE UNIVERSE

According to Einstein, mass causes time dilatation. Thus, time on the sun passes slightly more slowly than on the earth as the sun is considerably more massive than the earth. Since our universe has a mass, time is, of course, dilated by the mass of the universe. Thus, there must exist a detectable *universal time dilation*. When a photon travels through the universe, it not only loses energy and is redshifted due to this loss of energy but is subject to time dilation as well. This matter has a very interesting consequence. The deeper we look into space, the slower time seems to pass in relation to our perception of time. When we observe distant events in the universe, then these events seem to proceed slower than events at a closer distance to us. For example, a flash light, as can be observed during the ignition of a nuclear fusion of a *type 1a supernova*, must appear from a greater distance increasingly time dilated compared with a light flash closer to us. This is indeed observable. The deeper we look into the universe, the more we have the impression that events are proceeding in slow motion.

When we observe an object with a redshift of *z = 1*, then an event that actually lasts for one second on this particular object appears to us as an event with a duration of two seconds. Thus, the time is dilated by the gravitational potential of the universe. The amount of time dilation can be easily derived with the help of the *redshift equation* because redshift and time dilation depend on each other.

$$ z \; = \; \frac{\lambda_r}{\lambda_e} - 1 $$

We merely have to substitute „λ_r" for „T_1" and „λ_e" for „T_0":

$$ z \; = \; \frac{T_1}{T_0} - 1 $$

Solving this equation for „T_1" , we get the value of the time dilation as a function of the redshift „z", i.e. of the distance of the observed object.

$$T_1 \; = \; zT_0 \; + \; T_0 \; = \; T_0\,(z + 1)$$

„T_1" is the perceived time dilatation of an observed event with a defined redshift and „T_0" corresponds to our perception of time. A duration of one second on an observed object with a redshift of z = 8.2 seems to be dilated in relation to an observer on Earth to a duration of 9.2 seconds. This corresponds to a 9.2-fold time dilatation.

Thus, the deeper we look into space, the less time has passed on the observed object. That is of great significance in regard to background radiation. What does this mean? We already know that the origin of background radiation is the light of far off stars which, due to the long journey through the universe, was subject to a gravitational redshift of *z = 3999.* When we observe these stars, we perceive a 4000 fold time dilation in relation to our perception of time. An observed event that took one second on the far off star is noticed on earth as an event which takes 4000 seconds, thus, about 67 minutes. That is ultra-slow motion. This in turn means, that background radiation gives us the unique possibility of being able to observe the early state of the universe and to study the state of ancient stars, globular clusters and galaxies. Thus, we can observe the ancient universe. The progress of time seems to be almost frozen. **Background radiation is a kind of time capsule that allows us to observe the state of the ancient universe.** We already have learned that background radiation is an image of these stars that has been magnified about 4000-fold. This is truly amazing. With the help of skilled engineers it should be possible to attain high-definition images of background radiation and, thus, obtain a terrific view onto the ancient universe. This given possibility is a divine gift and really incredible. It almost seems as if God wants to show us how the ancient universe looked like and he even allows us to watch the ancient processes in 4000-fold slow motion with 4000-fold magnification. Terms like gravitational redshift, time dilation and gravitational magnification were to Mr. Lemaitre, Mr. Hubble and Mr. Gamow closed books, and definitely boggled their

minds. During the lifetime of Lemaitre and Hubble, very slowly the momentous achievements of Einstein broadened the restricted horizon of the physicists who clung to classical physics, thus, one can certainly understand Lemaitre's and Hubble's classical interpretation of things. However, Gamow´s dilettantism is not excusable. Einstein`s findings should nowadays be amongst the skills of every astrophysicist. When so-called „reputable astrophysicists" still preach Big Bang nonsense today, with the help of the collaborating media, this is boundlessly irresponsible because it misleads the populace which does not expect myths and fables but rather scientific enlightenment. People not only expect, but also deserve, scientific enlightenment based on sound science because they pay for the immensely expensive devices used to explore the universe with their tax money and, of course, they pay the wages of the astrophysicists. Therefore, they should not be taken for fools. One gets the impression that some astrophysicists want to demonstrate that they are „super-illuminated scientists" enthroned in divine spheres like Olympian Gods or like priests of science with the claim of infallibility. This, however, is the ultimate form of human arrogance and stupidity.

MATTER-ANTIMATTER ASYMMETRY

We will move on to another misconception which is a direct consequence of the Big Bang theory. Reference is made to *matter-antimatter asymmetry*. What does this mean? It is actually believed that at the beginning of the universe a nearly equal amount of matter and antimatter existed. This might, at first glance, seem to be comprehensible if one assumes a Big Bang. According to the Big Bang theory, only energy existed at the beginning of the universe and later matter arose from this energy. When energy is converted into mass, two kinds of particles are generated: *matter* and *antimatter* particles. It is assumed that during the Big Bang a tremendous amount of energy was set free (created out of nothingness) which later converted into *matter* and an equal amount of *antimatter.* The problem is that *antimatter* and *matter* immediately recombine into energy as soon as they come in contact with each other, thus, no *matter* and no *antimatter* would exist in our universe but rather just energy. This process is called *annihilation*. However, a very clever idea was conjured up to explain why only matter was left in the universe. The conjured up „bunny" is called „*matter-antimatter asymmetry*". According to this theory, a teensy-weensy imbalance existed between *matter* and *antimatter* at the beginning of the universe. This is great, right? The theory states, that after the *annihilation* of almost the entire *matter* and *antimatter* of the former universe, an extremely small amount of *matter* was left over which could not convert into energy again due to lack of *antimatter*. This „leftover" formed the universe as we perceive it today. According to the theory of „*matter-antimatter asymmetry*", for example, one billion matter particles found 0.99999999 billion corresponding antimatter particles and were retransformed into energy. There was just a slight asymmetry which resulted in the phenomenon that one matter particle was left over from one billion matter particles. Is that not awesome and divinely omnipotent? Thus, God felt compelled to start his creation out of nothingness with a huge amount of energy and a teensy-weensy error, just so that highly intelligent specialists of cosmology (the crown of creation!) could later postulate a *matter-antimatter asymmetry* after an alleged Big Bang. This ridiculous assumption will be definitively debunked in the following, based on sound physics. The *matter-antimatter asymmetry* is another prime example of incredible nonsense which is made acceptable in cosmology. How is this possible? Such absurdities have been spewed out in the cosmology over many decades, as we already know. Let

us just assume that the theory is true, then, about two billion times more matter than the entire matter of the universe was annihilated (one billion times the mass of the universe in the form of *matter* and 0.99999999 billion times the mass of the universe in the form of *antimatter*). We will consider this problem with the help of sound physics. This is not difficult at all because Einstein gave us a great and handy tool. This tool is called $E = mc^2$. With this equation, we are enabled to calculate the amount of energy that would have been left over after the annihilation of about two billion times more matter than the assumed entire matter of the present-day universe. When *matter* and *antimatter* annihilate, the resulting amount of energy is not zero but actually a highly-energetic radiation. Now, we will express the equivalent energy of two billion times the mass of the universe expressed in form of the physical unit Joule. We will divide this amount of energy by the currently assumed volume of the universe. We assume a radius of the universe of 13.7 billion light years since this value has been established and is part of the Big Bang theory (even though this assumed radius is pulled of thin air, as we have already pointed out). We even choose the currently estimated size of the universe to beat the Big Bang theory with its own statements.

Assumption:

Almost two billion times more mass than the mass of our universe was annihilated:

$$1{,}74 \cdot 10^{62} \text{ Kilogramm}$$

Equivalent amount of energy according to Einstein's equation $E = mc^2$:

$$1{,}566 \cdot 10^{79} \text{ Joule}$$

Volume of „today´s" universe with an estimated radius of 13.7 billion light years:

$$9{,}12 \cdot 10^{78} \text{ Kubikmeter}$$

This would result in a „today´s" mean energy density of the annihilated matter-antimatter of:

$$1{,}7 \text{ Joule/cubikmeter}$$

Thus, when we divide the calculated energy of the annihilated *matter* and *antimatter* of **1.566 ·10⁷⁹ Joules** by the estimated volume of „today´s" universe of **9.12 ·10⁷⁸** cubic meters, the result is a mean energy density of about **1.7 joules** per cubic meter. The entire universe would have to be considered as a *black body* (see item 19, appendix) containing this amount of energy. With the help of the *Stefan-Boltzmann law*, it is possible to calculate the temperature of this *black body*, called our universe. According to this law, the mean temperature of the universe would be **6900 Kelvin**. Therefore, the annihilation would result in a background radiation of today 6900 Kelvin. According to *Wien's displacement law*, this in turn results in a background radiation maximum at a wavelength of about **420 nanometres** which corresponds to a beautiful highly-energetic violet, illuminating our night sky. How great and utterly romantic. However, we do not see such background radiation because there was never an annihilation of *matter* and *antimatter* and there was never a Big Bang.

Stefan-Boltzmann law and *Wien's displacement law*:

Stephan-Boltzmann-law: $\dfrac{U}{V} = aT^4$

U/V : energy per volume
a : radiation constant
T : temperature in Kelvin

Wien's displacement law: $A_{max}= 2.897,8 \ \mu m \ K/T$

A_{max} : wavelength of the radiation maximum
K : Kelvin
T : temperature in Kelvin

There is no 6900 Kelvin background radiation but there is a *2.7 (1.4) Kelvin background radiation*. This radiation will show, by means of very high resolution images of satellites and ALMA, the ancient stars and the ancient universe. Imagine the cosmologists, disgraced by such high definition images when they have to admit that their conclusions of the

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last 80 years are a web of lies and huge fraudulent fake. What a disgrace! However, we will all be witnesses to this tremendous disgrace and, then at last, we will observe how the infamous swindle of a mock Big Bang and plenty of other „mock-theories" will become obvious to the world. The truth will forge ahead, relentlessly.

THE KERR METRIC AND IT'S ABSURDITY

It is believed that the so-called *Kerr metric* describes „rotating black holes". To understand what the Kerr metric is supposed to stand for, we have to adopt the classical point of view as we did when we considered the futile *Chandrasekhar limit*. Thus, we have to adopt the wrong interpretation of „black holes". This is the *Kerr metric*:

$$c^2\,dr^2 = \left(1 - \frac{r_S\,r}{r^2 + (\frac{L}{Mc})^2 cos^2(\Theta)}\right) c^2 dt^2 + \frac{2r_S r\,(\frac{L}{Mc})\,sin^2(\Theta)}{r^2 + (\frac{L}{Mc})\,cos^2(\Theta)} cdtd\Phi - \frac{r^2 + (\frac{L}{Mc})^2 cos^2(\Theta)}{r^2 - r_S r + (\frac{L}{Mc})^2} dr^2$$

$$- \left(r^2 + (\frac{L}{Mc})^2 cos^2(\Theta)\right) d\Theta^2 - \left(r^2 + (\frac{L}{Mc})^2 + \frac{r_S r\,(\frac{L}{Mc})^2}{r^2 + (\frac{L}{Mc})^2 cos^2(\Theta)} sin^2(\Theta)\right) sin^2\Theta d\Phi^2$$

There is no need to remember this equation because it is pointless, describing the absolutely impossible, and is simply an example of mathematical gimmickry that is far removed from reality. The equation includes a major error which is easily exposed. We have already derived a central component of the Kerr metric in the course of this book, the so called *Kerr parameter* **L / Mc**. This parameter describes a collapsed object, rotating at the speed of light. However, we have already learned that this is impossible because the *centrifugal force* prevents a collapsing star from reaching the radius defined by the Kerr parameter *L/Mc*. Furthermore, Einstein described how the mass of a star, rotating at the speed of light, would increase endlessly, thus, its gravity would increase ad infinitum. This, in turn, would instantly destroy the universe because the entire universe would be „sucked in". Furthermore, we know that „black holes", in the classical sense, cannot exist, thus, „rotating black holes" logically cannot exist in our universe as well. However, *black spheres,* which were mathematically described by Karl Schwarzschild in conformity with Einstein's General Theory of Relativity can exist indeed. *Black spheres* represent a lack of space, time and mass in our universe. This topic has already been explained thoroughly in this book. The term "rotating black hole" is completely misleading and does not represent reality at all. The *Kerr parameter* has absolutely no significance in reality

because the radius of a collapsing star can never reach a radius resulting in a rotation as fast as the speed of light. Once more, if just one star in the universe rotated as fast as the speed of light, its mass would become infinitely large and, consequently, its gravity would be unlimited as well. This would inevitably lead to a collapse of the entire universe. However, this is prevented by the *centrifugal force* of a rotating, collapsing star. At a defined contraction radius, the *gravitational force* and the counteracting *centrifugal force* are balanced (*balanced forces contraction boundary*). This defined radius is always reached before a further contraction would allow the star to rotate with the speed of light. It is, therefore, impossible that a star is able to continually collapse until finally a rotation with the speed of light could be reaches. Thus, the Kerr metric does not make any sense and is absolute nonsense. This point begs the question of how it is possible that astrophysicists do not recognize this unambiguously wrong assumption of the much-vaunted Kerr-metric. However, this is just one example of plenty of nonsensical theories postulated and propagated by astrophysicists. The whole of cosmology is based on ingrained incompetence or lies. But, how can we describe the distortion of space caused by a rotating collapsed object in accordance with Einstein's laws? Let us consider the Schwarzschild solution. The Schwarzschild solution describes the distortion of space caused by a non-rotating, globular, collapsed star. If one observed an extremely compressed star, one would notice an increasing distortion of space with increasing approximation towards the Schwarzschild radius of the collapsed star. However, the Schwarzschild radius itself can never be reached, in the same way as it is impossible that an object can actually reach the speed of light itself. It is only allowed to approach the speed of light, thus, the Schwarzschild radius asymptotically without ever reaching these limits. In the case of a non-rotating collapsed star (this is just a theoretical assumption, in reality a non-rotating star does not exist), the external position from which such a star is watched is immaterial. Whether watched from top, bottom, left or right, or at an angle, we cannot recognise a difference. Karl Schwarzschild assumed a non-rotating collapsed star in order to be able to describe mathematically the principle of the phenomenon we call a *black sphere*. A rotating *black sphere* cannot be uniquely defined in form of a general equation as is possible with a non-rotating system. The space, in the vicinity of a non-rotating *black sphere* is, regardless of

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the observed latitude, distorted everywhere in exactly the same manner. Thus, the Schwarzschild solution describes a very simple theoretical state of a collapsed non-rotating star. Considering a rotating, collapsed star this looks entirely different. A rotating, collapsed star which has, for example, collapsed into the state of a *black sphere*s can, in principle, form an unlimited number of different stages between an almost *globular black sphere* and a *ring torus shaped black sphere.* A black sphere that is shaped like a ring torus (**please see fig. 79 item 22, appendix**) has an infinite number of „Schwarzschild solutions" depending on the viewing angle. How can you picture this? If one cuts a uniform *globular sphere* through its centre (imagine you cut a melon across), one always gets the same results regardless of whether one cuts diagonally or vertically, whether from top to bottom, or from left to right. However, this is not the case with a ring torus. A tiny change of the cut plane through the centre of the ring torus (imagine a donut) yields a different result. Therefore, a *black sphere* in the form of a ring torus does not have a single „Schwarzschild solution" as is the case with the Schwarzschild solution of a *globular black sphere.* In principle, an infinite number of solutions are possible.

Again, the *Kerr metric* is pure nonsense and describes the impossible because its basis, the *Kerr-parameter* „**L / Mc"**, never occurs in our universe. It is more than disconcerting that this fact does not attract the attention of cosmologists. The only explanation is a lack of expertise or deceitful motives. There is no other possible explanation. How can we imagine the *black sphere* of a collapsed, rotating star? A *black sphere* of a non-rotating star appears as a globular „bubble" containing space, mass and time in its periphery, thus, it appears as a globular gap in the space-time structure of the universe. Contrary to this, a collapsed, rotating star forming a ring torus shaped *black sphere* looks completely different, depending on the viewing angle. If one were to observe such a ring torus shaped *black sphere* from the direction of its rotation axis, the ring torus would appear as a globular *black sphere*. However, if one observes a ring torus shaped *black sphere* from the side then it seems to have the form of flattened sphere. All other angles of view show intermediate forms **(see item 22, appendix)**.
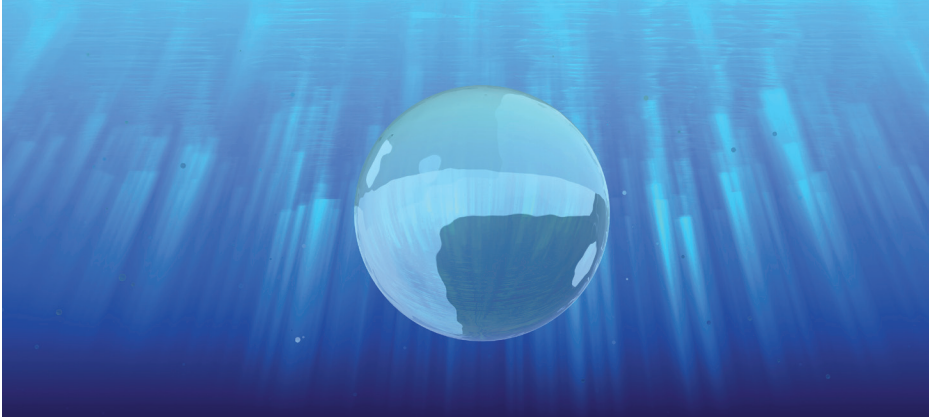
Fig. 66 | A globular *black sphere* which displaces space, time and mass within our universe is comparable with a bubble of air, displacing water within water. A bubble of air is a lack of water within water and a *black sphere* is a lack of space time and mass within our universe.
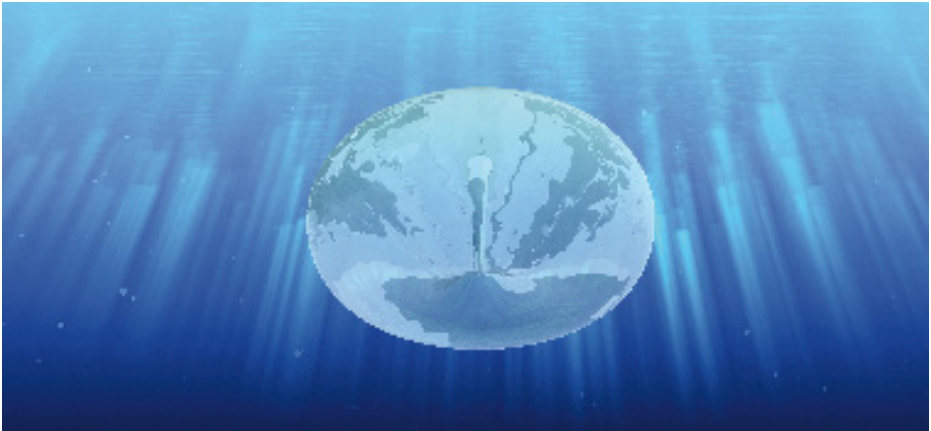
Fig. 67 | An extremly fast rotating *black sphere* is a torus shaped lack of space time and mass within our universe and comparable with a torus shaped bubble of air within water displacing water within water.

The two above illustrations of air bubbles within water should give you an idea of how one can imagine the two described *black spheres* (an endless number of intermediate shapes are possible). Similarly to air bubbles in water which displace water, *black spheres* displace space, time and mass. This makes the "5th Dimension" visible in our universe! The „5th Dimension" is just a lack of space and observable indeed.

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CLOSING REMARKS

You have learned in the course of this book that it is incredibly easy to refute most of the theories of so-called „modern cosmology" and to solve the secrets of the actual wonders of the universe which have been disguised for so long by the Big Bang theory and other nonsensical theories propagated by so-called cosmologists. It really is about time we leave behind this dead-end into which astrophysicists have driven themselves with a great deal of time and effort, and return cosmology to a reputable path. **For this reason, an urgent appeal is addressed to open-minded astrophysicists and especially to young students of astrophysics: you are the future of real modern astrophysics, thus, be critical and always question what others want to put over you.** Use your sound mind and the tools of physics which were placed in your hands. Contribute to abolishing the myths of the *Big Bang*, the theories of *inflation*, *dark energy*, *dark matter, black holes, gravitational waves, matter-antimatter asymmetry*, the theory of *singularity*, the *Kerr-metric*, the *Chandrasekhar limit* and the *Friedmann equation* as we have done in the course of this book, so that we can return to a reliable and physically founded consideration of the universe again. The incessant fabrication of mystical effects and forces is simply too much, especially when those fantasies are even awarded Nobel prizes and spread by countless documentaries. Such an approach is simply untrustworthy and has nothing in common with the respectable notion of truth. What happens here is pure obfuscation, hinders scientific progress and is a relapse into the dark ages.

Cosmology is not just a question of physics but rather a socio-political concern. When the world is deceptively deceived in the field of cosmology then there is good case for believing that this happens across-the board as well. Cosmology must not be misused as a kind of religion to influence people as has happened in all epochs of human history. Scientists must not envisage themselves as a kind of science priests or an Illuminated Order but as people keeping things empirically in perspective in order to find the truth. It is clear that we will never attain the ultimate truth, thus, an absolute knowledge of all things, but it is quite respectable and mandatory that all scientists are completely focussed on the truth and

are at least on an asymptotical path towards it. Thank you not only for your interest, but also for the patience and the time you have taken to follow the explanations in this book. Contribute to breathing new life into cosmology based on reputable physics. Be brave!

In scientia veritas!

APPENDIX (DISAMBIGUATION)

1 | Hubble equation

The US-American astronomer *Edwin Hubble* derived his equation in order to define the mathematical relationship between the distance of observed objects in the universe and their apparent radial escape velocity (the speed objects move away from an observer if one assumes a Big Bang), solely based on the redshift of the spectral lines. Hubble observed an increasing redshift of the absorption lines in the spectra of galaxies (9) the further they are away from us. From this, he intially concluded that the further galaxies are away from us, the faster these galaxies are moving away from us. This conclusion is based solely on a classical effect called the *Doppler Effect* (9). Thus, he believed that the universe is expanding increasingly faster. However, this was a completely erroneous conclusion because he was not aware of the fact that light, on its way through the universe, is exposed to a relativistic effect called the *gravitational redshift effect* (10) resulting in light being increasingly redshifted by the gravitational potential of the universe, the further it travels through the universe. That is, Hubble intially had no idea of Einstein's General Theory of Relativity. This means that the Hubble equation, and everything based on it, is worthless as many other theories of so-called "modern cosmology". In spite of this fact, Hubble's intial interpretation was used to „substantiate" the Big Bang theory. To this day, Hubble´s erroneous conclusion is a central aspect of cosmology which is real evidence of ineptness in the field of cosmology. In the course of this book, it is proven that Hubble's classical interpretation is based on a fatal error. Hubble himself argued against his intial interpretation later on, when he recognised, that the observed redshift of distant galaxies is caused by the gravitational potential of the universe. However, his equation is still in use.

2 | Theory of Inflation

The Theory of inflation is an oxymoron and not worth the paper it is written on. The following illustration (fig. 68), shows that, according to the ridiculous logic of the cosmologists, space itself expanded superluminally at the „beginning" of the universe. Thus, the question arises: superluminal expansion in relation to what? A superluminal expansion would only be

„observable or measurable" if the „observer" were located „outside" the universe. A superluminal expansion would not at all be noticeable within the expanding universe itself because there wouldn´t be a reference frame in order to allow us to relate the speed of expansion with a fixed something. It is assumed that this expansion subsequently decelerated abruptly. According to the statements of so-called "modern cosmologists", the expansion of the universe is presently accelerating again. A really bizarre theory, is it not? This theory was fabricated due to two reasons. Firstly, based on the observed increasing red shift of the spectral lines of far-off galaxies. Initially Edwin Hubble had wrongly concluded, based on the classical Doppler-effect(9), that the universe would expand increasingly fast.. Thus, he fabricated his Hubble equation:

$$ v_{rad} = z \cdot c = H_0 \cdot r $$

The term „z" stands for the amount of red shift of the spectral lines of the observed galaxies. „v_{rad}" stand for the incorrectly assumed *radial escape velocity* of the galaxies. It is obvious that the escape velocity of the galaxies, according to the above equation, becomes superluminal when *z > 1*. Hubble observed, within the capability of the telescopes in his days, only *z-values* smaller than 1. However, nowadays we can already observe much greater *z-values (z > 8)* which leads the cosmologists to believe that the universe once expanded superluminally. Because the Hubble equation was viscerally fabricated and lacks of any empirical basis, the theory of superluminal inflation (expansion) of the universe is pure hogwash and as dilettante as the Hubble equation itself. However, there is another reason that leads to the incorrect assumption that the universe once expanded superluminally. The theory of inflation was wrongly devised in order to explain the detected value of the *2.7 Kelvin background radiation.* If one wrongly assumes that there was a Big Bang and, furthermore, assumes that there was a *Planck temperature* (the theoretically highest allowed temperature) of about 14000 billion billion billion degrees Celsius at the beginning of the universe, then, after an assumed classical and continuous expansion of the universe, which lasted 13.7 billion the mean temperature of the universe would not be 2,7 Kelvin but almost 0 Kelvin *(~0,00000000000001 Kelvin).*

Fig. 68 | This „overturned beer glass" results partly from the assumption of an inflationary superluminal expansion at the beginning of the universe. The second reason to explain the shape of the above illustration is the discrepancy between the results derived by means of the luminosity-distance-measurement and the distances derived with help of the observed redshift and the Hubble equation. What does that mean? As we all know, a light-emitting object becomes fainter, the further away it is from the observer. If one knows the actual luminosity of an object, it is easily possible to compare the actual luminosity of this object with its decreasing apparent luminosity while the object recedes from the observer. This is possible due to the fact that the apparent luminosity of a receding object reduces with the square of its distance to the observer. However, there is a significant discrepancy between results based on luminosity-distance-measurements and the results based on the redshift and the Hubble equation. By means of the luminosity-distance measurement, much greater distances are obtained than by means of the Hubble equation. To explain this discrepancy this idiotic "overturned beer glass"was concocted.

To clarify why the Theory of Inflation was fabricated, one has to pretend that the entire universe was once concentrated in the smallest possible volume, the *Planck volume* (this is a typically classical point of view and has nothing in common with reality). The Planck volume is indeed very small: *4.22…· 10^{-105} m^3* or written-out:

0.00000000000000000000000000000000000000000000000000000000000000 000000000000000000000000000000000000000000000000422m^3

It is mistakenly assumed that the entire energy of the universe once was concentrated within this volume and that the universe had the

theoretically allowed highest temperature of *1.41·10^{32} Kelvin*. It is said that the universe expanded after the Big Bang, thus, the volume subsequently increased (this is an interpretation solely on the basis of classical physics and has nothing in common with reality). Thus, after each doubling of the volume of the universe, the temperature decreased to half the previous value since the energy of the universe was distributed over twice the volume. The physical definition of the amount of energy per volume is called *energy density*. Doubling the volume in which there is a certain amount of energy results in a respective halving of the *energy density*, thus, a halving of the temperature of the universe. If one follows this classical logic, then the temperature decreased to a value of 2.7 Kelvin after about *106* doublings of the volume of the universe since the inception of the universe, that is since Big Bang. However, after *106* doublings, the universe would have had a radius of 0.0026 meters, thus, a radius of 2.6 mm! After about another 95 doublings, the volume of the universe would have had the present value but then the temperature would be slightly above zero Kelvin (~0,00000000000001 Kelvin). In an attempt to explain the discrepancies, the nonsensical superluminal inflation of the space of the universe immediately after Big Bang was thought up. According to the Theory of Inflation, the volume of the universe expanded superluminally about 10^{100} times within an infinitesimal short time frame. And, yet, everything is perfectly explained. However, the Theora of Inflation is evil trickery, explains absolutely nothing and it is, of course, unprovable. This is a typical example of the "magic hat physics", practiced for more than 80 years in the field of cosmology with the dubious intention of keeping the esoterical Big Bang theory alive in any way possible. Such swindling has absolutely nothing in common with reputable physics. The Theory of Inflation is so preposterous that any further description is a waste of time. This theory is nonsense in the word's truest meaning and another scandal which exposes how poorly trained the cosmologists seem to be in physics but much more, the theory reveals their con game. Everything that has been calculated in this book has been known for 100 years. If one assumes, however, that cosmologists are quite familiar with the laws of physics one is forced to conclude that all the statements of cosmology are deliberate lies. The question arises: Who, or which dubious esoteric circle is interested in such a deceptive manoeuvre?

3 | Dark Energy

This mysterious energy has been thought up in order to explain the increasing expansion rate of the universe. The energy necessary in order to allow such an accelerated expansion of the universe is said to be *Dark energy*. However, since there is no expansion of the universe, this energy belongs into the dustbin of history. Nevertheless, based on this dubious theory, it is suggested that the supposed Dark energy represents about 71% of the total energy content of the universe! About 24 % are supposed to be a dubious Dark matter which is also a mock energy. Only about a tiny rest of 5% is supposed to the observable universe. However, the 95% mock energy in the form of Dark energy and Dark matter are mystical nonsense and devoid of any physical logic. It is hard to believe that their fabrication is the result of poor science. One is much more inclined to suspect dishonourable intentions behind this practice.
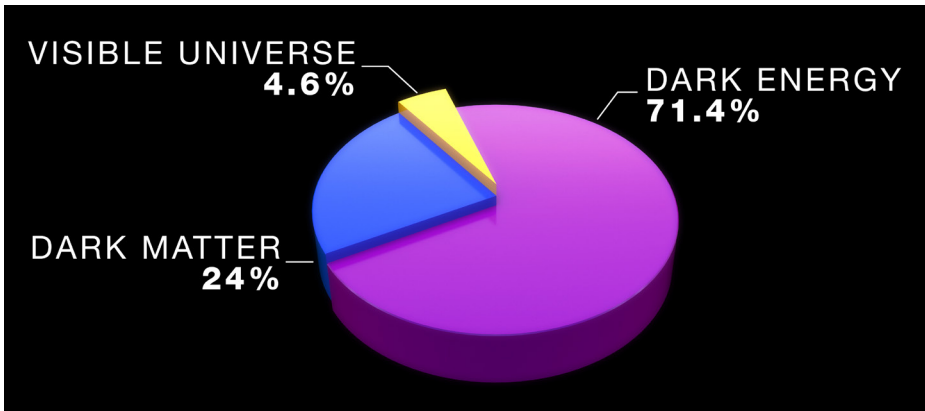

Fig. 69 |

4 | Singularity

Subrahmanyan Chandrasekhar mused during his ship passage from India to England (1930) about the shrinking of burnt out stars to virtually nothing, a point without extent, even though he had neither sufficient knowledge of the special and general theory of relativity, nor sufficient knowledge in the field of quantum physics and nuclear physics. A state in which space

and mass of a star would be concentrated in a point without extent is called a *singularity*, or to be correct, a *point-singularity*. The famous British astronomer Sir Arthur Eddington, who later became Chandrasekhar's professor, became very exasperated with Chandra as he propagated his strange ideas without sound knowledge. This can be amusingly read in the book „*Empire of the stars*" *by Arthur I. Miller*. At the beginning of the last century, the floodgates were open for any kind of speculation in the field of astronomy. It has to be kept in mind that at this time there was still no knowledge of how or why stars shine. The process of nuclear fusion was still unheard-of. In those days, astronomy had more in common with fishing in murky water than with sound physics. It was at this time that physics underwent a rapid and fundamental change from the previous classical physics to the modern relativistic physics and quantum physics. However, the fact that the nonsense of a point singularity of a collapsed star is still taught today is scandalous and disregards modern physics. Ever since Karl Schwarzschild presented his Schwarzschild solution in 1916, it has been absolutely clear that singularities cannot exist in our universe, but this was neither a problem for Chandrasekhar, nor is it a problem for today's astrophysicists. It is doubtful whether Chandrasekhar knew anything about Schwarzschild and his relativistic Schwarzschild solution. This matter gives further evidence of ineptness in the field of cosmology.

5 | Nicolaus Copernicus

Nicolaus Copernicus was born in Torun (Poland) in 1473. While studying the planetary orbits, he had the wise idea of placing the sun at the centre of our planetary system instead of the earth because, as he explained, he found it much easier to comprehend. This simplified the explanation of planetary motion immensely. However, particularly for biblical reasons and in order to retain the influence and the power of the Roman Catholic Church, the propagation of the idea of the sun being the centre of our planetary system was actively suppressed. So, the earth „remained" the centre of our planetary system. This system is called a *geocentric model* or *Ptolemaic worldview*. Today, of course, we know that the sun is located at the centre of our solar system which is called a *heliocentric model* or in honour to Nicolaus Coperinicus a *Copernican worldview*.

6 | Galileo Galilei

In 1609, the Italian natural scientist and philosopher Galileo Galilei became aware of the invention of the German-Dutch optician Hans Lippershey, a telescope. In the same year, Galileo pointed his own telescope towards the sky. He watched the moon, the phases of Venus - similar to those of our moon –, the planet Saturn with its rings and the planet Jupiter with its four most notable moons, Yo, Callisto, Ganymed and Europa. He saw the four moons orbiting Jupiter. This was the first time that a human being could observe „little"moons orbiting a much larger planet. Thus, why should not the sun be orbited by the planets? Due to Galileo's observations, it seemed to be much more likely that our planetary system is a heliocentric system rather than a geocentric system. The celestial bodies were obviously levitating in space and they obviously had a globular shape and were not flat like a plate. Although he shared his observations with the authorities of the Roman-Catholic church by means of his telescope, they were, to put it mildly, not very amused and placed Galileo under house arrest for the rest of his life! But they made sure he saw the torture chambers of the Holy Inquisition first. Next, he was advised to revoke his „heretical hypotheses" if he did not want to suffer physical pain or end up like *Giordano Bruno*, a very famous and respected Italian scholar and Dominican monk in those times in Europe. In the opinion of the authorities of the Roman-Catholic church, Giordano´s ideas and thoughts in regard to the cosmos were "too far-reaching". After seven years of imprisonment, Giordano was publicly burned on February 17, 1600 on the Campo de´ Fiori in Rome. During the seven years of his inhumane incarceration, he did not even see the sun.

7 | Ptolemy

Claudius Ptolemy was born around 100 AD and was a representative of the geocentric world view, according to which the earth is at the centre of our planetary system, although, the scholar Aristarchus of Samos about 300 BC had already postulated a heliocentric world view according to which the sun is located at the centre of our planetary

system and orbited by the planets. For biblical reasons, the Ptolemaic world view became the standard model of cosmology until the Middle Ages. This is a perfect example of how a prevailing spiritual dominion influenced and dominated science. In order to make sure that the earth is the centre of our planetary system and to explain the loop motions of the planets in the night sky, the „perfection" of the Ptolemaic model, the so-called *epicyclic planetary motion model*, was invented. Nowadays, the equivalents are dark energy and the theory of Inflation, invented to „perfect" the Big Bang theory. The Dark Ages send their regards. This is very embarrassing and a disgrace to modern-day astrophysical „science."
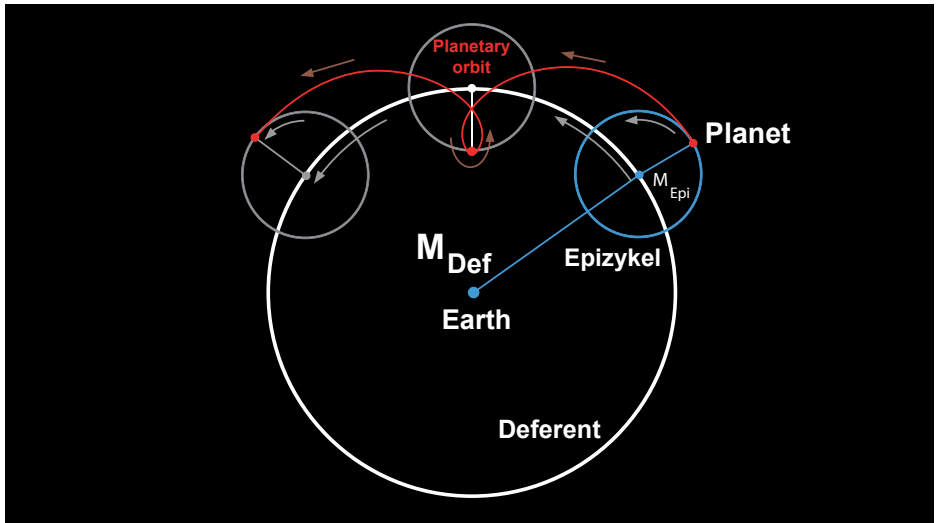

Fig. 70 | Epicyclic planetary motion modell

8 | Nobel Prize in 2011 and its background

With the help of the luminance fluctuation of so-called *Type 1a Supernovae,* the Nobel laureates tried to verify the distances of celestial objects in our universe which were calculated on the basis of their redshift and on the Hubble equation. Through their own admission, they did this with the intention of disproving the Big Bang theory. However, it was

a „complete surprise" that they allegedly substantiated the Big Bang theory. The luminance fluctuation of SN-type 1a supernovae is caused by the interaction between two stars in a binary star system. A so-called *white dwarf* (burnt-out, low-mass, collapsed star that is steadily cooling down) gradually suctions matter, primarily in the form of light elements, from its companion star. At a certain point, these light elements begin to fuse (nuclear fusion) on the surface of the white dwarf. This results in a tremendous explosion, a so-called "Type 1a Nova or Type 1a Super Nova". This process frequently occurs at specific intervals. Since the absolute magnitude (the actual luminosity) of such detonations is claimed to be known, it should be possible to determine the actual distance of such objects by means of *luminosity-distance-measurement*. The further apart such objects are relative to an observer, the more their apparent luminosity, i.e. apparent magnitude, decreases. The luminosity decreases as the square of their distance to the observer. If the distance is doubled, the apparent luminosity is reduced to ¼ of the previous value. For example, if a star is located twice as far away as another absolutely equal star, then this star will appear to the observer a quarter as bright as the star at a closer distance. If the absolute magnitude of a celestial object is known accurately, then this absolute magnitude can be compared with the apparent magnitude of the star and, hence, it is easily possible to calculate the distance of this object. Wow! The problem is, that nobody really knows the absolute magnitude of Type 1a Super Novae. Nobody knows the absolute magnitude of such a Super Nova because there are plenty of unknown parameters. Estimates in respect of the SN Type 1a are made using the extremely doubtful Chandrasekhar limit (12), which is a kind of sleight of hand, as demonstrated in the course of this book. Thus, there is no empirical basis to determine the distance of Supernovae Type 1a due to the fact that the derivation of the Chandrasekhar limit is based on completely wrong assumptions and conclusions. The whole method is a cheap joke filled to bursting point with inaccuracies and speculations and proves absolutely nothing. SN-Type 1a are not suitable for use as a kind of "calibration stars" to verify distances in the universe and certainly not to substantiate a Big Bang Theory. What is a hundred percent precise and eminently suitable to explain the universe and its dynamics are the intellectual achievements of four very clever scientists named *Isaac Newton*, *Max Planck*, *Albert Einstein* and *Karl Schwarzschild*.

However, if one does not understand how to make proper use of these achievements, which have been known to us for more than 100 years, then one will never have a chance to understand the dynamics of the universe. The main problem in the field of cosmology is a lack of analytic experience. Thank God, we have outstanding engineers, bringing incredibly great observation satellites into existence. By means of next-generation satellites, providing high definition pictures of the background radiation, it will be easily possible in the foreseeable future to deliver the damning proof that the Big Bang theory is esoteric humbug. In the future, it will also be possible to research the spectra of the stars of the ancient universe which are the source of background radiation. Then the misconceptions of astrophysical „science" of the past 80 years will become obvious to everybody.

9 | The Doppler effect and the red shift of spectral lines

Everyone has certainly experienced the change in tone of the siren of a police car or ambulance that appears to be high frequency as the vehicle approaches at high speed, and which at the moment the vehicle passes and subsequently departs, becomes low frequency. This is based upon the effect that the sound waves shorten (frequency becomes higher) when the sound source is approaching, and lengthen (frequency becomes lower) when the sound source departs. This effect is called the *Doppler effect.* We observe the same effect with light waves when light is subject to the Doppler effect. The speed at which the light source, for example a star, is departing or approaching can be derived based on the shift of the spectral lines of the star. If one bends the light of a star through a prism, it is split into various colours, like a rainbow. At some places in the spectrum black lines appear. These lines tell us which elements the star contains. In the laboratory on Earth, these lines occur at very specific points in the spectrum of the light emitting object, depending on the respective elements the source of light exists of. When the so called *absorption lines* of stars appear shifted towards the red end of the spectrum - compared to the laboratory values -, the star is moving away. When the lines are shifted towards the

blue, the star is approaching. This is true if the shift of spectral lines is solely caused by the classical Doppler effect. However, there is another (relativistic) effect which changes the wavelength of light in the universe. This effect is called the *relativistic gravitational redshift effect.*
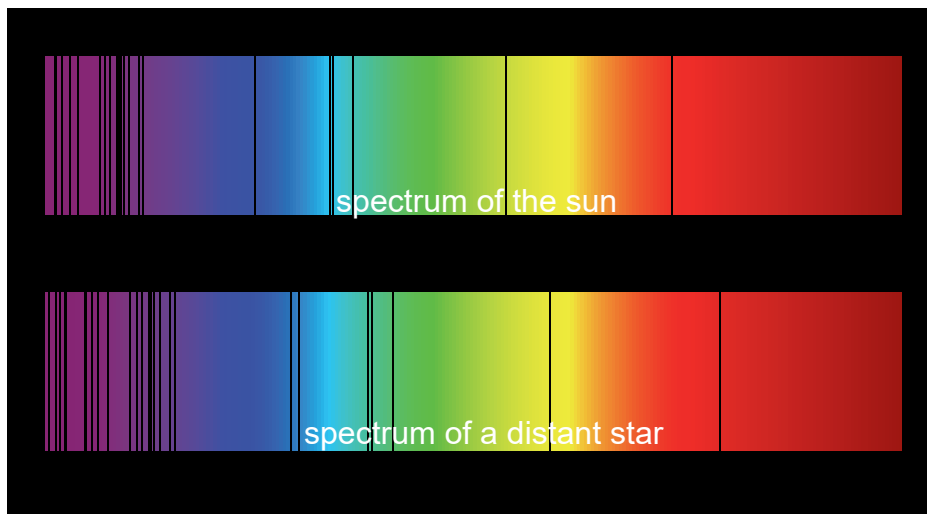

Fig. 71 | Redshift of spectral lines.

10 | Relativistic gravitational redshift effect

Einstein recognized that light is redshifted by the gravitational potential of a mass because light loses energy whilst influenced by the gravitational potential of a mass. Contrary to a bullet, shot into the sky, a light photon is not decelerated by the gravitational potential of a mass but the wavelength of a light photon increases (the frequency decreases), thus, according to Planck, the energy of a light photon, influenced by the gravitational potential of a mass, decreases. Red light has a longer wavelength than blue light, thus red light has less energy than blue light. According to Einstein, light is more and more redshifted the longer it is exposed to the gravitational potential of a mass. This is a relativistic effect. If one mistakenly interprets this redshift as a result of the classical Doppler effect, then one can mistakenly get the impression that objects are moving away from an observer. This fatal misinterpretation led to the wrong conclusion that our universe is expanding.
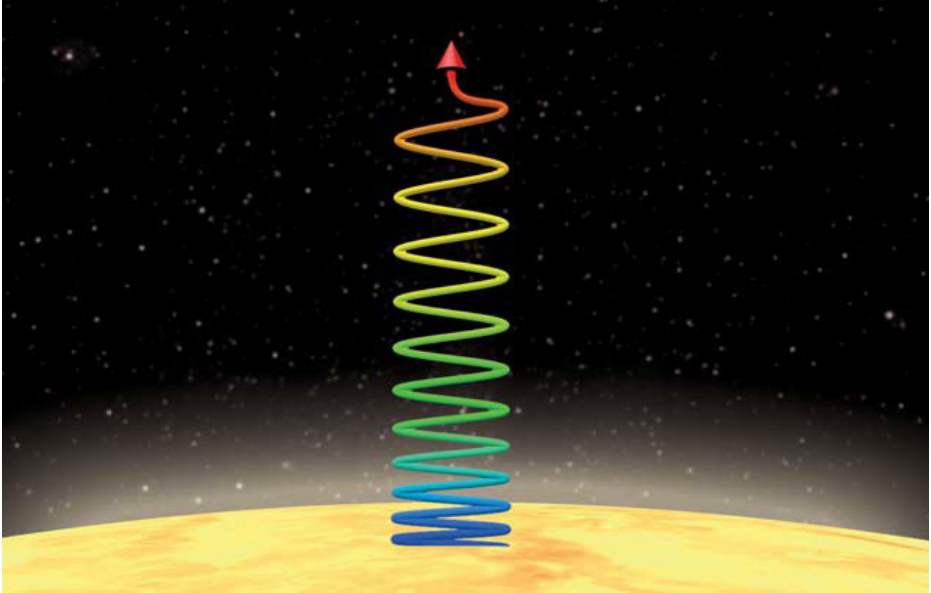
Fig. 72 | According to this depicted example, a light wave is emitted by a star in the form of highly energetic blue light and becomes gradually redshifted by the gravitational potential of the star, thus, light loses energy whilst influenced by the gravitational potential.

11 | background radiation

In between the 1940´s and the early 1960´s, the physicists Gamow, Alpher and Herman calculated various residual temperatures (5 – 50 Kelvin) of the alleged Big Bang under the assumption of a super-hot Big Bang followed by a subsequent expansion and cooling of the universe. However, the attempt at calculating a residual temperature resulting from a Big Bang that never happened was like looking for a white cat in a snowstorm. In the year 1961, Gamow published the following equation for determining the residual temperature of the universe:

$$temperatur = 1.5 \cdot 10^{10} / \sqrt{t}$$

According to this equation, today´s background radiation would be equivalent to a temperature of the universe of 50 Kelvin. Yet, this equation is based on pure guesswork and has no physical validity.

Indications of this "residual temperature" were searched for but nothing was found. The *2.7 (1.4) Kelvin background radiation* (in a wavelength range of about *2mm*) was coincidentally detected by Penzias and Wilson while calibrating their radio antenna and was promptly misinterpreted as the residual glow of the supposed Big Bang. However, the detected background radiation is the result of the long journey of light through the gravitational potential of the universe. It is the extremely red-shifted light from the stars of our ancient universe which did not occur after a Big Bang. In the course of this book, a thorough explanation of why the background radiation is not the residual glow of a Big Bang is given and likewise the designation „*2.7 Kelvin background radiation*" is shown to be wrong. Actually the background radiation is equivalent to a temperature of 1.4 Kelvin.

12 | Chandrasekhar limit

The so-called *Chandrasekhar limit* owes its name to the calculations of Subrahmanyan Chandrasekhar - an Indian-born American astronomer - in respect of *White dwarfs* (burned-out stars with low mass). According to Chandrasekhar, this limit defines the upper limiting mass of a burned-out star that does not have sufficient mass to become a „black hole" or at least a „*neutron star*"(14). However, the Chandrasekhar limit is based on incorrect assumptions that defy the laws of physics. It is based solely on angular momentum considerations of a specific star and the assumption that a collapsed star is able to rotate with the speed of light. This is impossible and is prevented by the centrifugal force that does not allow a collapsing star to attain a radius that would enable the star to rotate at the speed of light. The famous British astronomer Sir Arthur Eddington, a mentor of Chandrasekhar, had already emphatically criticized Chandra´s nonsensical approach and even accused him of lacking understanding of relativistic effects. However, today´s astronomers have no such doubts about Chandrasekhar's calculations being correct, which is incomprehensible. The Chandrasekhar limit is meaningless because it is absolutely impossible that an object could rotate at the speed of light. In the course of this book, it is thoroughly explained that such a speed of rotation would inevitably lead to a collapse of the

universe because the mass of a rotating object, rotating with the speed of light, would endlessly increase and thus its gravitational force would endlessly increase as well. The star would immediately suck in the entire universe. Fortunately, God „invented" centrifugal force which prevents a collapsing star from ever rotating as fast as the speed of light. In spite of this, Chandrasekhar was awarded a Nobel Prize for his calculations in regard to White dwarfs. This is really unbelievable and evidence of incapacity in the field of cosmology.

13 | Cepheid variable stars

These stars take their name from a type of star in the Cepheus constellation. *Cepheid variable stars* are massive unstable stars which are subject to variations in brightness and extent. These variations occur in specific periods. Stars of this type are so-called „*red giants*" which are stars in the final state of their evolution. This means that those stars expand beyond their original size as they are puffed up for reasons arising from nuclear physics. The periods of variation in brightness and extent lie in a range between one and about 130 days. Cepheid stars are unstable because they have already fused together all the hydrogen of their cores to form helium, and now helium burning is in progress followed by further fusion processes. The stars have to find a new balance between the outwards force, caused by the radiation pressure of the nuclear fusion and the inward acting gravitational force. That causes their fluctuation in size and brightness.

On the following page is an example of a periodical fluctuation in brightness.
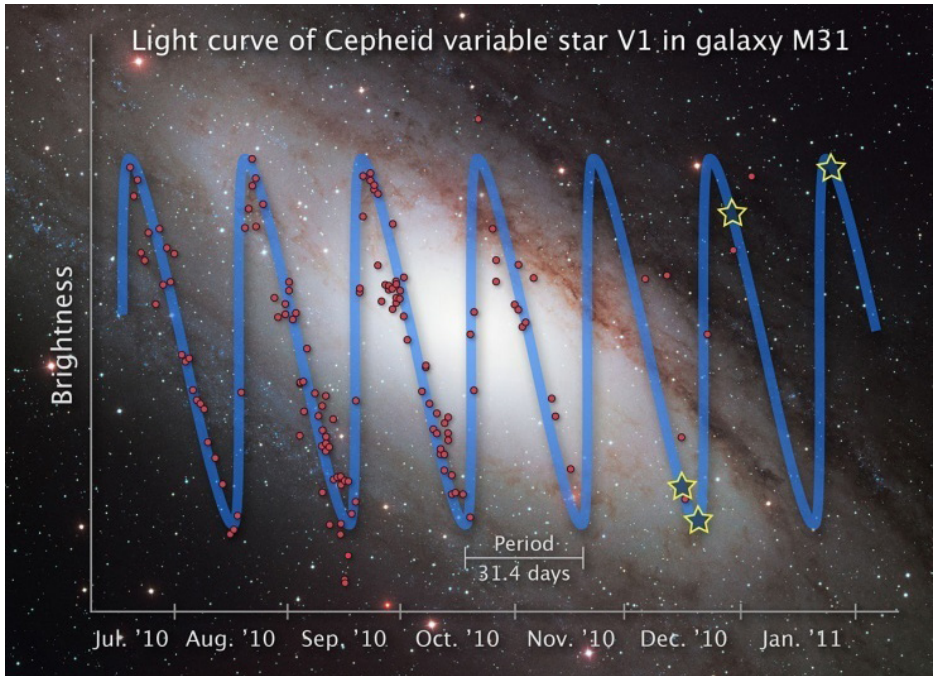
Fig. 73 | Fluctuation of brightness of a so-called *Cepheid variable star*.

14 | Neutron stars

The theory of neutron stars implies that neutron stars are highly compressed, collapsed stars which do not have enough mass to become a „black hole", but their density is sufficient enough in order to „press the negatively charged electrons of the atoms into the positively charged protons of the atomic nuclei". According to the theory, the result of this assumed process is, that the entire stellar remnant consists purely of neutrons, or that it could even be considered as a huge single neutron. However, this theory is a fantasy that is due for retirement. Let us get to the bottom of the *Neutron star theory*. This theory was fabricated in the 1930's. In fact the following procedure is more likely. When atomic nuclei are extremely tightly packed, they are completely ionized, that is, the atomic nuclei are divested of their electrons. The electrons of an atom „orbit" the atomic nucleus in specific (discrete) orbitals and it is

completely impossible for the electrons of an atom to orbit anywhere other than in these discrete orbitals because a „between" theses orbitals simply does not exist. Electrons are not allowed to be located anywhere in-between these orbitals. If atoms are packed so tightly that the electrons can no longer remain in their discrete orbitals, they leave their orbitals and become free electrons. Thus, the atomic nuclei are ionized. In the case of a collapsed star, the free electrons take the easiest route and accumulate at the surface of the collapsed star. The electrons build an extremely dense and highly conductive electron plasma at the surface of the collapsed star. Due to this process, the so-called "degeneracy pressure"of the electrons no longer prevents the atomic nuclei from becoming tightly packed. Normally, the repulsive force of the electrons of the atoms prevents the atomic nuclei from coming too close. When the atomic nuclei are ionized, the degeneracy pressure of the electrons can no longer act to prevent a continual collapse of the star. However, now the *Coulomb force (16)* of the atomic nuclei prevents further compression (degeneracy pressure of the equally charged protons). This force acts as a barrier. If the gravitational force of a collapsing star were strong enough to overcome the so-called *Coulomb barrier* (16), a kind of gigantic atomic nucleus would be formed out of the entire atomic nuclei of the collapsed star. Such a super nucleus would consist of protons *and* neutrons. Further compression is not possible. In addition, elementary particle physics excludes the possibility that a star could collapse to a point without extent. Such a hypothesis has nothing in common with physics and is pure esotericism. The highest empirically ascertained density is the density of the atomic nuclei. To postulate a higher density, is pure speculation. Due to the rapid rotation of a collapsed star, the electron plasma on the surface of the collapsed star induces a gigantic magnetic field which in turn causes the strong focusing of matter jets as we know from pulsars and magnetars (collapsed stars with an extremely strong magnetic field). Attracted matter (ionised by interaction of this matter) accumulates at the magnetic poles, depending on the electric charge of the particles. This process leads to a high energy interaction of the particles and results in gigantic matter jets blasting off matter into space.

15 | Photon

One can imagine light as a continuous flow consisting of single photons. Thus, light is not a continuum but rather consists of very small units with specific energy content. These units or quanta are called photons. The term „photon" originates from the Greec term „photos" (light). However, the term „photon" is applicable to any kind of electromagnetic wave and is not restricted to visual light.
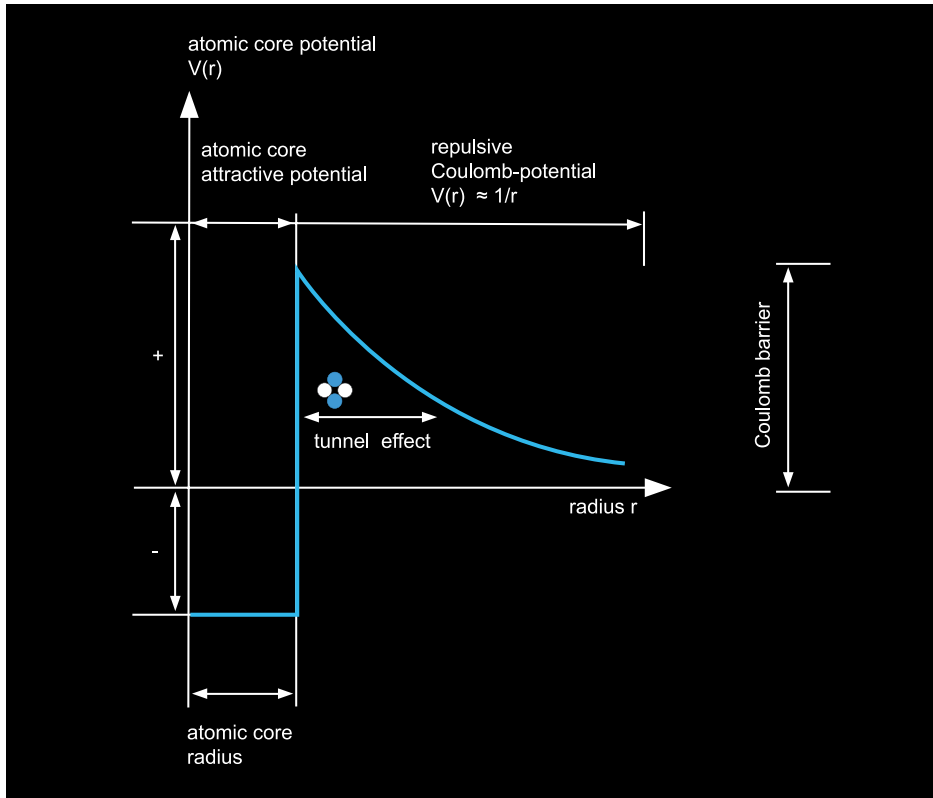
16 | Coulomb barrier

Fig. 75 Depiction of the Coulomb barrier charateristic

Atomic nuclei are positively charged. The closer atomic nuclei approach each other, the more they repel each other, or, in other words, the greater the so-called *degeneracy pressure* becomes. As is shown in fig. 75, the blue line increasing from right to left indicates, that increasing energy is required to tightly pack atomic nuclei. As can be seen, the blue line increases to a maximum and then drops abruptly to a negative energy range. The ascending line is the Coulomb barrier which is similar to a dam. The drop of the blue line into the negative range means, that after exceeding the Coulomb barrier even more energy is released (generated) than was required to bring the atomic nuclei closer together. Indeed, this is what makes it possible to generate energy by nuclear fusion. However, energy generation by nuclear fusion is only possible up to about the element iron. Energy generation with elements heavier than iron is only possible by nuclear fission. Therefore, in stars, solely elements up to the element iron are formed by nuclear fusion. In order to form heavier elements by fusion, energy is required. If the fusion of elements heavier than iron could generate energy, every collapsing star would explode like a fusion bomb and nothing at all would be left over of the star. Since the fusion of atomic nuclei heavier than iron consumes energy, this energy must be taken from the gravitational binding energy of a collapsing star or from an inbound explosion shock wave. Nevertheless, it is not possible to compress a star ad infinitum. Heavy elements can actually escape into space when the collapsing star blasts off a huge portion of its mass into space because of reflected explosion shock waves. Since elements heavier than iron are found on Earth (these were definitely not formed on Earth), it can be assumed that our solar system formed after the explosion of a massive star. The exploded star is called a Population II star and the sun is called a Population I star.
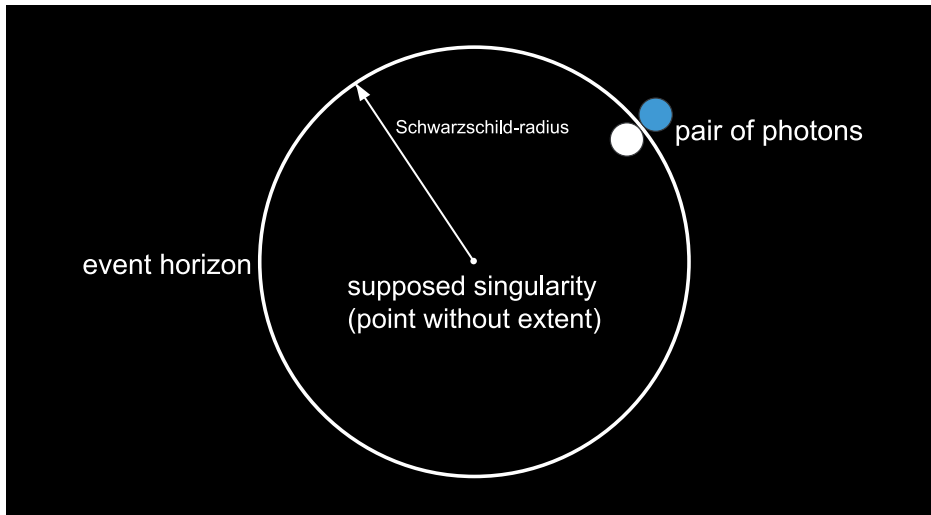
17 | Hawking radiation

Fig. 76

Hawking radiation does not exist because "black holes", i.e. an "event horizon", cannot exist in our universe due to relativistic laws. What does this mean? It is seriously postulated that so-called *virtual particles* (contrastive pairs of particles) could spontaneously appear out of nothing (dubious creation ex nihilo). These pairs of virtual particles are not to be confused with matter and antimatter. (***Whenever something is postulated that arises ex nihilo you should know that this is very dubious.***) To preserve the law of conservation of energy, the entire process must take place within about 10^{-43} seconds. (***However, this is not possible due to the fact that a shorter time interval than 10^{-43} is according to Planck not allowed, and thus the following is nonsense, anyway.***) If the wrong classical interpretation of a „black hole" is considered as true, the Schwarzschild radius defines an "event horizon" that can, in the classical sense, be exceeded by particles. It is assumed that a singularity is located at the centre of a „black hole" in which space, time and mass shrinked to the size of a dimensionless point. In the course of this book, we explain that this idea is wrong, however, if we assume that the false notion of a „black hole" is correct, then it should be possible for contrastive virtual pairs of particles to emerge exactly in/on

the "event horizon" (which is defined by the Schwarzschild radius). In this case it would be conceivable that a particle could "fall into the black hole" and, thus, disappear forever. In this case the other virtual particle could not reunify with its partner, thus, it would become a real particle in our universe (dubious creation ex nihilo). Such a particle could be observed in our universe in the form of radiation. This radiation is named after Stephen Hawking because he first postulated such dubious radiation. However, since there are no classical "black holes" but only relativistic *black spheres* (lack of space time and mass within our universe) *Hawking radiation* cannot exist. Yet, there is another reason that *Hawking radiation* cannot exist. The radiation would definitely contravene the law of conservation of energy. The universe is a closed system with a defined content of energy. This amount of energy cannot change. But an actual creation of energy, such as *Hawking radiation*, would increase the content of energy in our universe which is definitely not allowed. Thus, *Hawking radiation* is pure nonsense for different reasons. This topic is explained in the section: „*The singularity and the solution of Hawking's problem*".

18 | The phenomenon of entanglement

The *phenomenon of entanglement* is a quantum physical phenomenon. Entanglement means that two spatially separated particles form a single unit in a kind of superordinate dimension and only appear to us as separate particles in our spatial, three-dimensional world. Thus, two entangled electrons, although spatially separated, paradoxically form a unit. When the characteristics of one of the entangled electrons are measured, the partner electron always has the opposite characteristics. For example, one characteristic of the electrons is the spin. The spin is not determined until the moment of measurement and not predictable in advance. One could say that even the electron does not „know" its spin until it is measured. At the moment of measurement, the spin is defined. Before the measurement, the spin is just a random state. This undetermined state is called *superposition* which means that the electrons, which are in superposition to each other, have two undetermined possibilities and, precisely at the moment of measurement, a „random decision is made" regarding the state of the spin, either up spin

or down spin. If the measured spin of one electron is an up spin, the other electron which is entangled with its partner electron, automatically has a down spin. The probability that the first measured electron „decides" to have an up or down spin is 50 percent and random. Electrons can have only an up spin or down spin with no intermediate states. When a special emitter emits an entangled electron pair and the spin of one electron is measured, the other electron assumes the opposite spin without any transfer of information from the measured electron. The determination of spin happens instantaneously, without any temporal delay. This can only be explained or understood if it is considered that the two electrons form a unit in a superordinate dimension. Thus, the postulation of a superordinate 5th dimension is nothing to get excited about. In the course of this book, it is stated that the only way in order to understand the phenomena of the universe is to assume a 5th dimension. This is necessary in order to understand background radiation and its true nature and the true nature of the so-called classical „black holes" which are actually relativistic *black spheres* (real lack of space, time and mass), mathematically described by the German physicist Karl Schwarzschild in 1916 on the basis of Einstein's General Theory of Relativity.

19 | Black Body

A black body is a so-called "ideal body" that emits its energy content in a way described by Planck´s law. For example, if iron is increasingly heated, we know that it will finally start to glow. The annealing colour depends on the energy contained in the heated iron. Thus, heated iron emits electromagnetic radiation similar to the radiation emitted by an ideal black body.

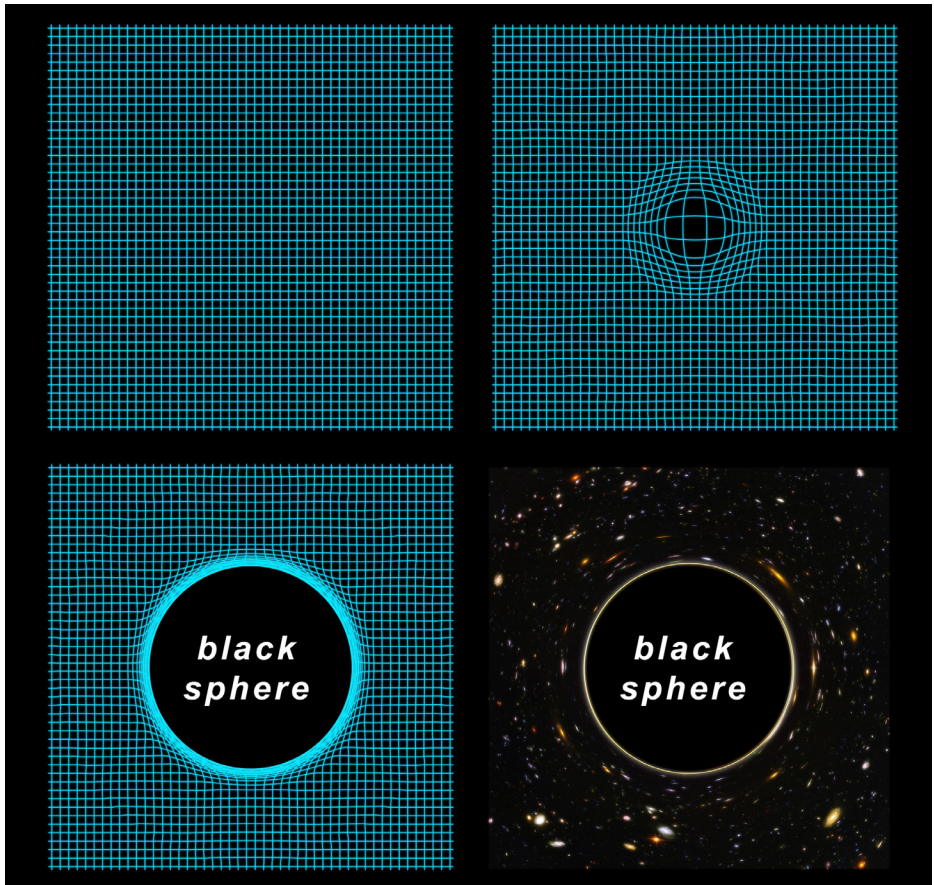## 20 | *black sphere* (you can find a describtion on the following page)

Fig.77 | This graphical depiction displays space as a 2-dimensional lattice structure. What is falsely called "black hole" is in reality a *black sphere*. Within the reality of our universe this phenomenon represents a displacement of the space-time structure of our universe. Such objects are not fictitious but are actually observable **(see Fig. 24)**.The collapsed star is located around the *black sphere*. "Within" a *black sphere*, there is neither space, nor time, nor mass. There are no "black holes" into which something can fall and disappear and thus, could get lost to the universe. Back in 1916, Karl Schwarzschild had already correctly described the principle of the *black sphere* on the basis of Einstein's general theory of relativity correctly. It is scandalous that, nevertheless, the theory of "black holes" has been generally acknowledged in the field of cosmology. The *black sphere* phenomenon solves the Hawking´s paradox, who has been perfectly right about the idea that there can be no „black holes" in the universe. However, this means the death blow to Hawking radiation.
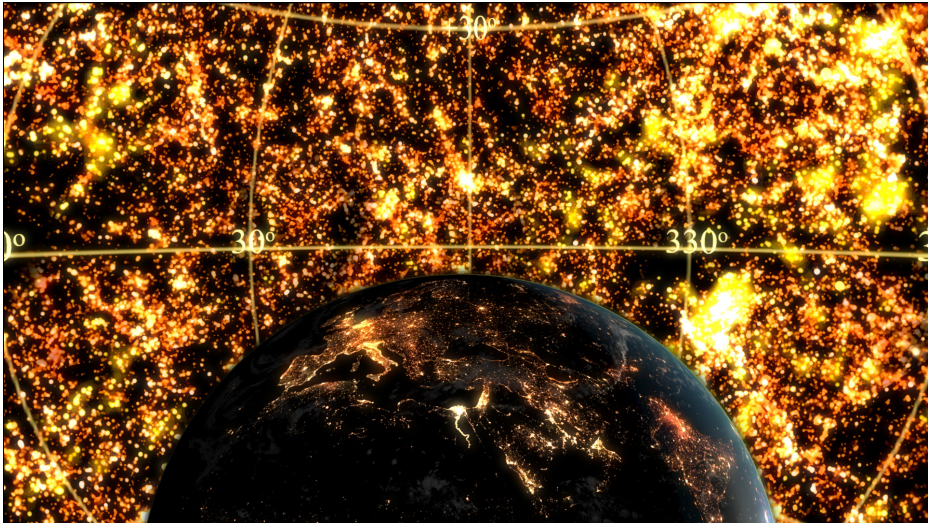
21 | 360°-projection of background radiation

Fig. 78 | If one were able to see the background radiation with bare eyes, a similar picture would emerge looking from orbit to Earth.

The background radiation represents a **360°-projection** of a small region of our ancient universe, which lies, figuartively speaking, „opposite" from us. Therefore, we receive the radiation from all sides **(see also Fig. 60, page 178)**. Due to the gravitational potential of the universe, the stars within this region seem to be 4000 times magnified and their light has been subject to a 4000 times red-shift towards the microwave range. Observable events within this region were subject to a time delay by a factor of 4000. If you could see the background radiation with the naked eye, it would appear similar to the above illustration. However, due to

the Big Bang theory, this fact is completely misunderstood and is not used in order to study our universe as it was about 22 billion years ago. Therefore the Big Bang theory significantly hinders progress in the field of cosmology. Big Bang theory will not survive forever, because the true origin of the cosmic background radiation will be discovered in the near future by means of high-resolution satellites and microwave telescopes. This book is intended to contribute to this fact.

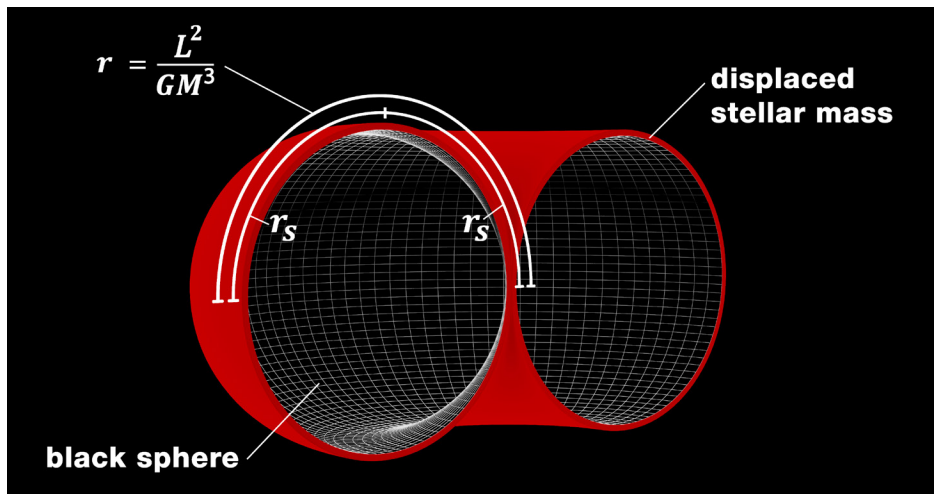## 22 | Various forms of *black spheres*

Fig. 79 | This is a cross section of a *black sphere* in the form of a torus as it would appear to an external observer. "Within" this torus, there is neither space nor time, nor mass. The highly compressed star is located in front of the Schwarzschild radius (which is an asymptote), since this radius (asymptote) cannot be exceeded but only be approached. However, in this relativistic depiction the Schwarzschild radius is not half the diameter of the two circle shaped torus sections but a quater of the perimeter of these torus sections. The „diameter" of the two circle shaped tourus sections is about 1,27 times the Schwarzschildradius r_S. (see also Fig. 23)

If we could observe the specific case of a *black sphere*, shaped like a torus upon reaching the *balanced forces contraction boundary*, then the situation illustrated above emerges. It is important to understand that the <u>classical balanced forces contraction radius</u> of a torus-shaped *black sphere* corresponds to half the perimeter of one of the circle-sphaped tori sections, depicted in the above <u>relativistic</u> illustration. This is shown clearly in **Fig. 23** and

explained on the **pages 79 ; 80 ; 81**. Therefore, in the case of the described *torus shaped black sphere*, the *balanced forces contraction radius* corresponds to twice the Schwarzschild radius (the two circle shaped sections of the torus can be decribed as two separate black spheres). Mathematically, this can be described as follows:

$$2r_S = \frac{4GM}{c^2} = \frac{L^2}{GM^3} \Rightarrow L = 2\,\frac{GM^2}{c}$$

A rotating collapsing massive star is able to collapse into the state of a *torus-shaped black sphere*, if the star has a specific *angular momentum „L"* (see the above equation). The minimum mass of a star which is needed so that a star can actually collapse to a *torus shaped blacksphere* is not considered in this equation. However, the reality of our universe must permit plenty of intermediate states of *black spheres*, thus, *torus-shaped black spheres* and those approaching the shape of *globular black spheres*. A perfectly *globular shaped black sphere* is not possible. This would only by possible for a nonrotating star. The following illustration shows just one example of an intermediate state.
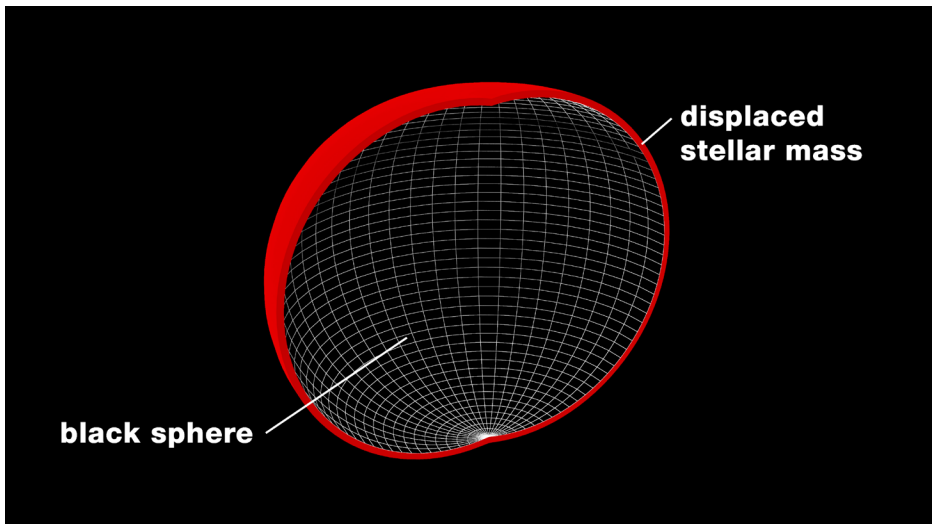
Fig. 80 | Intermediate form beween a globular and a torus-shaped *black sphere.*

Fig. 81 | As one can easily see on this picture, the „Cosmic Horseshoe" has not a globular shape (yellow circle) but an oval shape (red oval).This is a real example of an *intermediate black sphere!*

In addition, there must also exist *black spheres* that are located within a collapsed star! From the outside an object such as this would appear as a highly-compressed, extremely fast rotating star that hides a *black sphere* inside it. A number of pulsars and magnetars might, under certain circumstances, be home to such „*hidden black spheres*". This phenomenon has never been described before. The following illustration shows such a „*hidden black spheres*".
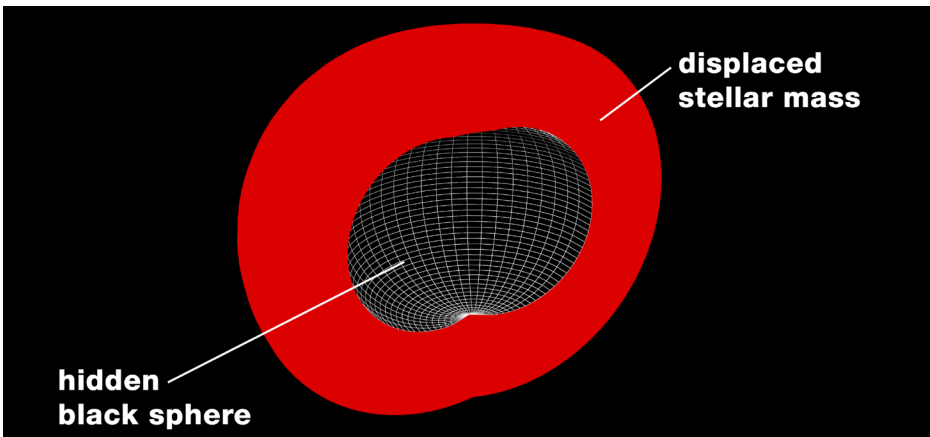
Fig. 82 | An example of a "hidden black sphere" which might exist within some pulsars and magnetars.

Derivation of the Schwarzschild radius equation:

$$E_{pot} = m \cdot g \cdot r$$

$$E_{kin} = \frac{1}{2} mv^2$$

$$F = G \cdot \frac{m_1 \cdot m_2}{r^2} = m \cdot g$$

$$E_{kin} = E_{pot} \implies v = \sqrt{\frac{2GM}{r}}$$

$$if \ v = c \implies c = \sqrt{\frac{2GM}{r}} \implies r_s = \frac{2GM}{c^2}$$

Derivation of the balanced forces parameter:

$$a = \frac{v^2}{r} \quad g = \frac{GM}{r^2}$$

$$a = g \implies \frac{v^2}{r} = \frac{GM}{r^2} \implies v = \sqrt{\frac{GM}{r}}$$

$$v = \frac{2\pi r}{T} \implies T = \frac{2\pi r}{\sqrt{\frac{GM}{r}}}$$

$$L = \frac{2\pi r^2 M}{T} \implies r = \frac{L^2}{GM^3}$$

Summery (equations):

$$\frac{c^2}{g_U}\left(1 - \frac{\lambda_e}{\lambda_r}\right) = D$$

Equation for determining distances within the universe based on the gravitational potential of the universe „g_U" (Pioneer anomaly)and the observed redshift with help of the received wavelength „λ_r" and the emitted wavelength „λ_e".

$$\frac{c^2}{g_U}\left(1 - \frac{1}{Z+1}\right) = D$$

Equation for determining distances within the universe based on the gravitational potential „g_U" of the universe (Pioneer anomaly) and the redshift faktor „z".

$$\frac{c^2}{g_U} = D_U$$

Equation for determining the diameter of the universe based on the gravitational potential „g_U" of the universe (Pioneer anomaly).

$$M_U = \frac{c^4}{4Gg_U}$$

Equation for determining the mass of the universe based on the gravitational potential „g_U" of the universe (Pioneer-Anomalie)

$$V_U = \frac{4}{3} \pi \left(\frac{2GM_U}{c^2} \right)^3$$

Mass-space--equivalence equation.

$$\left(\frac{E}{V} \right)_U = \frac{3}{2} \left(\frac{g_U^2}{G \, \pi} \right)$$

Equation for dertermining the energy density of the universe based on the gravitational potential „g_U" of the universe (Pioneer anomaly).

THE MAKING OF STEPHEN HAWKING

Hawking is held in high esteem. The media talk the common public into believing that Hawking is a genius. A genius is a person that provides highly valuable contributions in the best interest and benefit of mankind. However, what are the results of Hawking`s life-time achievement? Well, less than nothing. So, can we label Hawking as genius or is he more of an imposter? It seems that Hawking is just a label to promote nonsensical theories such as Big Bang theory, dark matter theory, dark energy theory, "black hole" theory, cosmic inflation theory and plenty of other dubious theories. Just a few people know that the vehement promotion of these theories is primarily of socio-cultural and even political interest rather than of scientific interest!

What is behind these dubious theories? Who is interested in deceiving mankind? What is behind the dubious "genius" Stephen Hawking?

After World War II the hot spot of astrophysical science shifted away from Europe towards the United States of America with the result that physical science has been degenerated into a playground of *esoterism* and *deceit*, which unfortunately does not attract the attention of the common public due to lack of natural scientific knowledge.

The following is like a flashback to the dark ages. Our "enlightened" present is just an illusion. Currently, lies and deception provide the basis of so-called "modern cosmology" with the intention to hoax the global public and to install a kind of "cosmic religion". Over decades the whole world has been duped by means of uncountable science and media reports and plenty of TV-documentaries, particularly in the fields of *cosmology* and *particle physics*. Perfidiously, the scientists themselves – except for a few sound physicists – don't consider themselves too good for "playing dirty", because they fear the deprivation of research funds or the loss of career opportunities and privileges if they do not follow the mainstream path, prescribed by an Anglo-American "mainstream-smithy", consisting of a conglomerate of several US-American and British institutions and interest groups.

A kind of dictatorial rectification has expatiated over decades like a spreading cancer. Some "scientists" deliberately lead the people astray just in order to enjoy financial advantages or a kind of media "cult status". The noble path of independent science has been left a long time ago. This has led to scandalous "research" in the fields of astrophysical science and elementary particle physics. The scientists make a mockery of themselves. Newton, Einstein, Max Planck and Karl Schwarzschild would turn over in their graves if they saw the degeneration of cosmological science. Some "scientists", like the Israeli physicist **Mordehai Milgrom**, are not above questioning millionfold reviewed physical laws like *Newton's law of motion* with the help of which costly satellites have been fired accurately into space since decades. And this just due to the fact that the galaxies of our universe are supposed to burst apart without the influence of a mysterious magical force, caused by a so-called "dark matter". Astrophysicists purport that the *rotational dynamics of galaxies* are comparable with the *orbital dynamics of planets*, thus, with Kepler´s third law, which is total humbug (*consult video III on our website*). Scientists doubt the fundamental and millionfold verified law of insuperability of speed of light and even question the validity of all empirically determined universal constants, which in turn leads inevitably to a loss of empiricism within the scope of science and makes science a speculative guessing game.

Just one example of such a treacherous procedure was the intent of a dubious "group of scholars" named **OPERA-Team** that led to a worldwide media hype. This team in autumn *2011* let on without any shame that they (allegedly) measured "*superluminal neutrinos*" by means of a "highly precise measurement process" at the *Large Hadron Collider CERN*. Each sound physicist knows, of course, that this is impossible, as according to the theory of relativity, a mass, however small, would get infinitely large while approaching speed of light. The fraud, of course, came to light. This was a highly embarrassing attempt to ignore physical laws. The **OPERA-Project** was shelved in December 2012. However, millions of tax revenues had flown.

One of the leading German newspapers **"Frankfurter Allgemeine Zeitung"** stagily accompanied this science scandal on **October 6, 2011** with the following announcement:

"Neutrinos faster than light? Einstein trembles"

"A constant for eternity: speed of light. Einstein's theory of relativity is based on it as well as our entire worldview. Physicists have measured once again and detected: There is a faster possibility – with the help of neutrinos. Is this an unknown anomaly?"

The denial followed about one year later. The German newspaper **"Die Welt"** wrote on **July 8, 2012**:

"Now official: Neutrinos not faster than light"

"In the fall of 2011, researchers claimed to have measured neutrinos moving faster than light. But not that fast it turned out, it was all a lie. The particles adhered to Einstein´s speed limit."

This is only *one* of several examples which disclose the insidious intention to remove empirical science in the field of *cosmology* and *particle physics* so that esoterism finds way into science. As the fewest people are skilled in the fields of astrophysics and particle physics, these attempts to deceive usually do not attract attention to the general public. Whenever the media proclaim with pomp and circumstances so-called "scientific sensations" in the form of worldwide media hypes - shivering with excitement - alertness is necessary.

For decades a mystification – mainly in the field of **cosmology** – has developed, which has nothing in common with empirical science but deception. Most astrophysicists genuinely claim **that the observable, measurable universe represents merely 5 percent of the entire universe. A whopping 95 percent of the universe is supposed to persist of mystical "*dark energy*" and "*dark matter*".** This totally nonscientific and unproven humbug is spread by means of uncountable TV-documentaries, until it counts as scientifically examined and proven in the eyes of the general public. The already mentioned "*dark matter*" is claimed to be caused by mystical "*dark elementary particles*" which are supposed to not correlating with "ordinary matter". Despite this strange feature, the mystical dark matter is supposed to "stabilize" the universe.

The magical "*dark energy*" in turn is supposed to provide the energy for the universe's expansion, a universe that allegedly emerged from a Big Bang which has never been proven, this, in spite of the fact that the true nature of the universe was – without any doubt – verifiably described about one hundred years ago by **Albert Einstein** and the Dutch physicist **De Sitter** on the basis of the theory of relativity and on **Max Planck's** quantum mechanics. Astrophysicists fool the world´s public into believing in a pseudo-scientific mystical spectacle. These "astrophysicists" should give up their profession!

Most of the astrophysicists seriously claim that so-called **"cosmic black holes"** (whose possibility of existence is excluded due to Einstein's theory of relativity) could function as a kind of "star gate" (wormhole) to other places of our universe or even to other universes. Such preposterous misinformation in the field of cosmology is not conspicuous to most people because they do not have basic knowledge in physics. **As long ago as 1916, the German physicist Karl Schwarzschild derived the true nature of alleged "black holes" on the basis of Einstein's general theory of relativity - entirely eliminating the possibility of "black holes", singularities and wormholes.** Anyway, the "scientists" themselves do not hesitate to spread such deceitfulness although they (should) know better. They are too afraid of interfering with the "mainstream dictate". Even the international media do not get tired of escorting the pseudo scientific, esoteric humbug and putting it in circulation. What do we have science journalists for?

Every time the general public is led into believing that only scientists are in a position of understanding the world in its whole due to their "excellent" education or even their inherent "ingenuity" (Stephen Hawking), always alertness is necessary. This is very dangerous. A blind trustfulness in scientists opens the flood gates of any type of deception and manipulation. Stephen Hawking, who is talked up as a genius, does not consider himself too good to catch the attention of the media in order to try to invalidate God**.** However, if you define God with the term *everything*, it is impossible to invalidate God, as *everything/ God* obviously exists. Just take a look around. This is a simple logic that proves God undoubtedly, right? Thus, the term "God" is first and

foremost a question of definition. Science is merely a means to observe/measure and describe existing things in form of mathematical models. However, science is not a means to prove the sense of existence itself. Attempts of such an outrageous undertaking should be reserved for the fields of philosophy and theology rather than for empirical science. By means of empirical science it is impossible to figure out the sense of existence and thereby the *why*-question. Solely the reply to the *how*-question is part of empirical science. Just a few people are aware of the fact that **Stephen Hawking** seems to be a kind of "scientific flashbang" that "puffs" unmistakably without generating any substantial "shock wave", or, to put it another way, Hawking enjoys a kind of cult status, but he actually does not contribute any sound and substantial scientific results to cosmological discussion. A flashbang prevents the clear view on things and is a means of camouflage. Hawking acts as a kind of imposter, establishing misguiding theories of a mystical cosmos, in which **95% mystical forces** are supposed to stabilize the universe. He has not achieved anything but humbug in the field of astrophysics, for example, the postulation of a so-called **Hawking radiation** that allegedly arises from impossible ***"cosmic black holes"***. As already mentioned, it was proven a hundred years ago, that the theory of relativity clearly prohibits the existence of "cosmic black holes". According to the theory of "black holes" high-mass collapsing burned out stars shrink into a state of nothingness, a so-called singularity. The idea of *"black holes"* was originally a intuitive idea of the Indian Brahmin **Subrahmanyan Chandrasekhar** (he conceived this idea as a 19-year-old on a cruise from India to England, where he later on studied astronomy under Sir Arthur Eddington). He tried to underpin his intuitive, religio-philosophical idea by means of classical physics. This attempt was defeated by his professor Sir Arthur Eddington.

With regard to Hawking there are only two options: or he has no knowledge whatsoever in the field of relativistic physics or he is deliberately defrauding the world. There is no other option. This testimony might appear as disrespectful, however, Hawking, as an educated physicist, ought to know thoroughly what is going on. Maybe he scrupled when he, at the beginning of 2014, told the flabbergasted "experts" that there might not be any "black holes" within the

universe, as there is a small but significant problem with the law of energy conservation. If something falls "into" a "black hole" it escapes from the universe and disappears into a state of nothingness, yet this is not allowed. Anyway, Hawking founded his Hawking radiation on this nonsense. In principle, it is dubious to argue that something arises from nothingness (Big Bang) or vanishes into nothingness (black holes) as this goes against the fundamental law of energy conservation. Mr. Hawking should know that.

It took the "cosmology guru" a whole 40 years of "research work" to determine the impossibility of "black holes". This is a really impressive evidence of incapacity. On August 25, 2015, the "genius" (Hawking) presented - with a great load of followers of the world´s press, in front of chosen "experts" of the KTH Royal Institute of Technology in Stockholm - a solution to the problem that "black holes" contravene the fundamental law of energy conservation , pretending as if it were a scientific sensation and a result of an ingenious brainstorm. However, exactly the same solution was already published by the German physicist Karl Schwarzschild in 1916 (a whole 100 years ago!), called <u>Schwarzschild solution</u>. **Strangely, Hawking did not say a word about his obsolete** *Hawking radiation*. **"Black holes" are the basis of Hawking radiation on the wrong assumption that "black holes" are leading into the nothingness of a singularity. Well, a genius does not make any mistakes.**

How long will it take until Hawking stumbles over his *Hawking radiation* **and until he sinks from his high pedestal into scientific insignificance. It seems as if Hawking is becoming a victim of the spirits he once used to cite in order to help him to rise onto the high pedestal of a genius, which albeit implies the possibility of sinking very deep. He now has to admit ruefully that 40 years of "research work" were absolutely pointless. Hawking is anything but a genius.**

When did the manipulation in the field of cosmology begin?

In the 1920's a widespread, religious motivated manipulation of scientific facts began, that is still going on in a scandalous manner. Superficially,

it was the **Catholic Church**, which used its power in order to expressly underline a cosmological worldview that was in compliance with the Book of genesis (Big Bang Theory). This bible-believing worldview was supposed to "scientifically" confirm the first Book of Genesis and to claim the spiritual and political power of the Church. It was a hysteric reaction of the Vatican to the fundamental findings of a young "Jewish upstart scientist" by the name of **Albert Einstein**. In those days an anti-Jewish attitude was more than normal in the clergy. Einstein actually dared to doubt the genesis. From the viewpoint of the Catholic Church of the early 20th century this bordered on blasphemy. (Einstein was a scientific Nobody before publishing his theory of relativity. He changed his German citizenship for a Swiss one and was forced to get taken on as a subaltern officer of the patent office of Bern, as he was avoided in Germany and it was impossible for him to find suitable work in his home country)

The described manipulation is still going on and keeps on contributing to non-scientific humbug that is always accompanied by the media with pomp and circumstances although the Catholic Church is not involved anymore. However, there is another group of dubious backers, which are interested in perpetuating a completely wrong and esoteric worldview for whatever reasons. It is to be feared that cosmological "research" and elementary particle "research" once again are misused in order to serve as a means to establish a kind of "cosmic religion". This again might explain the media hype in view of the so-called **"God particle"**, also called **"Higgs particle"**, due to its "founder", the physicist **Peter Higgs.** The Higgs particle is supposed to be the missing part of the puzzle to explain the material world without presuming "*God*". This, of course, is complete nonsense, as the whole existence and the sense of being cannot be empirically explained or proven by means of a mystic "*God particle*". This humbug is reflected in the US-American documentary "**Particle fever – Unravel the mysteries of the Large Hadron**". If one wants to explore the sense of being, there is only one way: Ask God. He would probably answer: "I did it my way!"

Another media hype was triggered at the beginning of the year 2014, when a group of "astrophysicists" of the **microwave telescope Bicep II** (South Pole) proudly announced to have measured so-called **gravitational waves –** an alleged echo of the Big Bang – indirectly, which turned out to be nonsense as such a measurement contravenes

the laws of physics. Gravitational waves were indeed described by Einstein, but they are "vibrations" of the space-time system itself, which cannot be felt or measured by us due to the simple fact that we and our measurement facilities are part of our space-time system and "vibrate" equally. Gravitational waves are a non-detectable, logical but purely theoretical, relativistic effect. Finally, the Bicep II team had to disclaim its supposed "measurements" (intents of fraud?) afterwards, as they were pure nonsense. The team members confessed that a "mistake" was made. However, radio, TV, print and other media published this humbug with roar. A certain **Mr. Uwe Reichert**, chief editor of the German astronomical magazine **"Sterne und Weltraum"** (Publisher: *Spektrum der Wissenschaft*), stated the following dubious headlines on **March 17, 2014**:

"Big Bang: First prove of cosmic inflation"

"For the first time astronomers recorded signals from a time shortly after the Big Bang: The experiment BICEP2 at the South Pole observed gravitational waves in the cosmic background radiation that date back to the early phase of the universe. This is a direct prove for the cosmic model of inflation".

By *Uwe Reichert*.

Uwe Reichert appears on the staff list of the *Max Planck Institute for Astronomy*. Thus, he is part of the center of German astronomical research and spreads, without any sound validation, the mainstream opinion of an alleged Big Bang. This is an evidence of incapacity. The whole scenario puts a poor light on the Max Planck Institute and raises the question what has become of this renowned institution. The Max Planck Institute discredits the name of Max Planck, his scientific life-time achievement and his scientific integrity. This is exactly how systematic misguidance of the general public takes place. The entire misinformation sticks in the public`s memory, despite some abashed denials afterwards. The process is hard to beat for impudence - as well as the alleged detection of superluminal neutrinos (faster than light) – and can without any doubt be called a fraud.

The German newspaper **"Die Zeit"** wrote on occasion of the alleged "discovery" of superluminal neutrinos in **February 2015**:

"The sensational discovery has crumbled into dust"

"Researchers declared in spring 2014 loudly to have furnished evidence for gravitational waves. Now they sing small: We exaggerated."

Oh well, "exaggerated". With such a sweet innocence they explain the inevitable fact of a science fraud!

Why does cosmology (macrocosm) as well as particle physics (microcosm) appear so interesting to esoterics of the Anglo-American "mainstream smithy" and what is the *socio-cultural relevance* of these two physical research sectors?

The *macrocosm* and the *microcosm* are difficult or impossible to grasp for the human imagery and furthermore associated with the essential question: "Why are we? Thus, the research of macrocosm and microcosm provide field of activity for esoteric groups and alleged "do-gooders". In our era of high tech research we are inclined to believe that insights in the field of cosmology and particle physics are not associated with esoteric or socio-cultural and even political interests but with sound science. Far from it! **Science is, as in ancient times, an instrument of power.** In ancient times the cosmos was far less of scientific interest, but more of religious interest and consequently of socio-cultural and political interest for the "ruling class". Considering the religions of ancient civilizations, they were mostly based on the cosmos and its recurring phenomena. The social system of those cultures was orientated accordingly. The ancient Egyptians, for example, worshiped *Isis (God the Mother)* and *Osiris (God the Father)*. Every Pharaoh was "cosmically begotten" and "born" as *Horus (Son of God)* during a sacerdotal ceremony at a specific celestial constellation. Hence, every Pharaoh was given the Egyptian name affix *Mose (the Born)*. Examples for this are *Amose, Kmose, Tutmose, Ramose (Ramses)* etc. Sounds familiar? It is reminiscent of the

Holy Trinity and the biblical Moses, does it not? *Isis* was worth a star sign that we nowadays know as *Canis Major* and *Osiris* is well known as the star sign of *Orion.*

In the Thirty Years' War, the <u>Catholic</u> Albrecht Wenzel Eusebius von **Wallenstein –** who fought on behalf of the Roman Catholic Church – asked the <u>Protestant</u> theologian and astronomer *Johannes Kepler* to cast horoscopes regularly. These horoscopes were an essential planning component of Wallenstein's warfare on behalf of the **Holy Roman Emperor of the German Nation.** Well, the end justifies the means. Even nowadays horoscopes are, for a greater part of people, deemed as scientifically sound. The ancient cultures of the **Sumerian**, **Egyptian**, **Aztec**, **Inca** and **Maya** and even the ancient **Roman** and **Greek** cultures were based on the phenomena of the cosmos. This is still true for **Christianity.** Nativity is celebrated when the sun leaves the southernmost point on the sun's ecliptic towards the north, after the sun seems to have remained three days on the deepest point of the ecliptic of the sun. This also represents the Resurrection of Jesus, who – according to Christianity – was dead for three days and then resurrected. Thus, the Resurrection is based on a mere astronomical event. The Christian Easter feast is celebrated on the first Sunday after the first full moon after the sun's passage through the vernal equinox. The fewest Christians know about these facts.

But besides that, religions can be instrumentalized easily in order to enforce (often violently) socio-cultural and political interests. Thus, religions are a very important means of the rules. All systems of rule need "religion" as a means to influence people for their interests. Exactly for that reason some very powerful groups of esoterics are interested to install a kind of "cosmic religion" and to make science an esoteric playground. It´s a highly regrettable tragedy that the scientists themselves join this dirty game.

How the influence of the Roman Catholic Church and the British/ US-American alliance change the cosmological doctrine?

When Albert Einstein drew a totally new image of the cosmos in 1915/16

– in accordance with the laws of physics – the Vatican was alarmed. "A Jew" of all people actually doubted the "genuineness" of the biblical Genesis. **Einstein postulated an everlasting universe without beginning or ending.** As a consequence, the biblical act of creation was not an option anymore, thus, there was no need for a beginning of the universe or any kind of creation ex nihilo like a Bing Bang. From the Church's standpoint a blasphemous conjecture and a direct attack on the Christian foundation! However, for Einstein – based on his calculations – a clearly defined extent of the universe was beyond debate. **According to Einstein, the space of the universe was curved like a globe and had to persist since ever. Thus, the universe did not begin with an act of creation as described in the Bible.** In the ears of the Roman Curia, whose mind-set was still in a medieval state in those days (before the Second Vatican Council), this, of course, sounded like heresy. Similar to *Galileo's* doubts in regard to the "godly system of the skies", whereby the earth was the center of the cosmos, Einstein's thoughts were heretical and an outrageous assault to a central, vital nerve of the Roman Catholic Church. Einstein had to swear off his blasphemous thoughts. But how could the Church contrive this? Had it been possible to torture or even burn him– as it was a common practice in the dark ages –, Einstein's fingernails would have been torn out one by one and a lot of dry wood would have been collected so that the fire flared well.

Well, it was not really possible to burn Einstein but to silence him in some way or, at least, to do everything in order to marginalize Einstein's theory of the universe. An "anti-theory" to Einstein´s theory of a "**steady state universe"** was needed, preferably, an imposing and breathtaking "fireworks theory", conformable to the biblical act of creation, which could have caused to blush even God. Without hesitation the Belgian priest and mathematician **George Lemaitre** was brought to the scene and was sent to MIT (Massachusetts Institute of Technology) with pontifical approval, to get the astrophysical "blessings". **In those days the United States were still innocent in the field of astrophysics and the American scientists were regarded as a kind of "scientific ragamuffins" and nobody wanted to "play" with them. Next to the scientific hot spot Europe, the United States of America were well below average.** The ones that could not find a job in Europe went to the United States. This

was possible due to a **Rockefeller scholarship.** Rockefeller did not only want to equalize the disparity between the United States and Europe through the "purchase" of scientists. His far-sighted interest was the scientific dominance and, furthermore, the dominance of the United States in all aspects. This was an extremely clever intention. As you know, knowledge is power and no knowledge "brings people to heel" and makes the people submissive. Oppression of knowledge and the spread of wrong information is one of the most important foundations of purposeful manipulation in order to subject people.

The, at the MIT gained astrophysical "blessings" were supposed to give George Lemaitre the scientific reputation as an "expert" in the field of cosmology. In the year 1927, Lemaitre postulated his **"primeval-atom model"**. This model conveyed that the universe originally began in form of a "primeval-atom" that subsequently expanded, thus, the universe´s "beginning" was, accordingly, an act of creation, conformable to the biblical act of creation. Today we know this **primeval-atom theory** as the *Big Bang Theory*. A fateful misinterpretation by the American astronomer **Edwin Hubble** (who later confessed his mistake) was the naive and amateurish basis (Doppler effect) in order to explain the observed red shift of the light of far off galaxies. This misinterpretation eventually manifested Lemaitre's "primeval-atom model". As per Hubble's interpretation of his observations the observed red shift of the light of the galaxies is solely based on classical physics (Doppler effect) neglecting relativistic laws. This led to the fatal misinterpretation that the universe is expanding.

Well, the observed red shift of far off galaxies is a totally normal relativistic effect that is caused by the gravitational potential of the entire mass of the universe. Einstein knew this exactly, Hubble initially did not. However, Lemaitre's model of "Genesis", the basis of today's Big Bang Theory, did not find even a little support amongst Einstein and the European physicists at that time. The humbug was chuckled about. **Hubble eventually recognized his mistake, which took place due to lack of knowledge of relativistic effects, and spoke vehemently against the theory of an expanding universe (which is not much known and not intended to be revealed).** However, this was not in the interest of

the Roman Catholic Church. Edwin Hubble is still celebrated, together with Lemaitre, as pioneer of an alleged "modern cosmology", although Edwin Hubble renounced his own expansion-theory during his lifetime. Einstein and all essential representatives of physical science were amused at Lemaitre's "Genesis theory", they found it utterly irrelevant, highly dilettante, and even childlike naive. For Lemaitre's primeval-atom there was only a tired smile left. Einstein told Lemaitre literally: "*Your calculations are right, but your physics is awful!*" The intent of the Roman Catholic Church, to challenge Einstein's relativistic model of an unchangeable and not expanding universe, had initially flopped in front of the levelheaded experts.

Unfortunately, the then "astro-pope" Sir Arthur Stanley Eddington (a conservative, Bible-believing Quaker) supported the theory of an expanding universe, although he was in the know of Einstein`s steady state theory, which explained the red shift of the light of far off galaxies as a gravitational effect. We have to call to mind that Eddington´s observation of the solar eclipse in 1919 substantiated Einstein´s general theory of relativity, which in turn brought Einstein into prominence. Obviously, Eddington decided for the Bible and against sound scientific facts. The following quotations are indicative of Eddington`s inner conflict, which arose on the one hand from his knowledge of relativistic and quantum physical effects, thus, of Einstein´s model of the universe, and on the other hand from Eddington´s firm belief, that the bible represents the absolute divine truth without a shred of a doubt.

"Lemaitres paper seems to me very obscure, but I have had the advantage of verbal explanations from the author" (page 52 "The expanding universe, 1933, Sir Arthur Eddington)

"But the theory of the expanding universe is in some respect so preposterous that we naturally hesitate to commit ourselves to it. It contains elements apparently so incredible that I feel almost an indignation that anyone should believe in it - except myself." (page 86/87 "The expanding universe", 1933, Sir Arthur Eddington)

"I have much more sympathy with those critics who deny the nebular recession

altogether, believing the observed radial velocities to be spurious" (page 86 "The expanding universe" 1933, Sir Arthur Eddington)

"Thus the only way of avoiding a great upset of ideas would be to explain away these radial velocities as spurious…For example, the light coming to us from an atom on the sun uses up some of its energy in escaping from the sun´s gravitational attraction, and consequently becomes slightly reddened…; this is the well-known shift predicted by Einstein."
(page 15/16 "The expanding universe" 1933, Sir Arthur Eddington)

When **Adolf Hitler** assumed power in Germany in 1933, the world-famous Albert Einstein became overnight a politically unwelcome person, a persona non grata, in Germany and later on in Europe. Einstein had to fear for his life. Thus, he had become susceptible to blackmail. **Therefore, it is not surprising that Einstein left Germany for good accompanied by the priest George Lemaitre (remember, some years ago Einstein had accused him of doing awful physics) about one month before Hitler's takeover, under the pretext of doing a lecture tour in the United States.** Most of the Americans felt obligated to Christianity. In a word, the influence of the Roman Catholic Church was also marked in the United States and made it easy to push Albert Einstein into scientific insignificance. **Refuge in the United States with a nice remuneration as a professor at the beautiful *University of Princeton*, against a generous concession regarding Lemaitre's "primeval-atom model"!** That was the way it worked. Einstein was checkmated and sat in a golden cage.

Just after Einstein´s arrival, the Director of the Univerity of Princeton indicated to him that **one expected political compliance** of Einstein: „**You are very welcome but please hold your tongue. Your personal safety depends on your absolute discretion."** Einstein felt very isolated at the placid University: „**It is most odd to feel so isolated despite being so famous, however, fact is, that this kind of popularity urges me to vindicate myself, which finally leads to isolation."** The University of Princeton was totally against Einstein´s nature and he never felt at home their. He said: „**Princeton is a quaint village, populated by demigods on stilts and very cerimonial."** That is how it came that Einstein became a victim of religion, esoterics and alleged "do-gooders" of a "new world order".

George Lemaitre introduced his "Genesis model" (primeval-atom model) in front of an attentive audience during his visit in the United States (just before Hitler´s takeover). Awkward silence and puzzled faces spread after Lemaitre's speech, until somebody applauded and shouted out into the hall: "**This is the most beautiful creation story I've ever heard!**" This "someone" was no less a figure than Albert Einstein himself. All the persons present turned their heads and could not believe what they saw. As the genius Einstein was applauding, Lemaitre's embarrassing primeval model could obviously not be as odd as believed, could it? Eventually, the whole audience applauded. Thus, Albert Einstein had made the Belgian Priest George Lemaitre and his absurd "primeval-atom model" "scientifically" acceptable, so to say with "pontifical blessing" (or should we better say with pontifical pressure?).

It is utterly important to conceive that the Big Bang theory is primarily of socio-cultural and even political interest rather than of scientific interest! That is the real unspoken reason why the Big Bang theory has been promoted since about 80 years and, furthermore, the true reason why any kind of criticism of Big Bang theory is vehemently quashed. One seems to have forgotten that doubts and controversial debate are vital elements of independent science and not strict obedience! The embarrassing Big Bang theory is vaunted as the greatest achievement of human brain work although this "theory" blatantly contravenes plenty of physical laws. **This theory is an imposition and an insult to human intelligence.** Einstein's position in respect of the Big Bang theory was shaped by convincing passiveness until his death, totally aware that this model had no sound relativistic foundation but was just based on a plain, classical interpretation, on the classical Doppler-effect. Potentially, Einstein did not believe that such a humbug could stand the test of time. He put complete confidence in the scientific capabilities of his colleagues and the implementation of sound physics by his colleagues. As it turned out, he was wrong. In the beginning there was, of course, still a considerable resistance against the Big Bang Theory, but with the passing of the decades this resistance became more and more marginalized. Scientists that spoke up against the Big Bang theory felt professional disadvantages or did not get any research funds anymore. The consequence: "Big Bang opponents" were increasingly isolated and

discredited. **Most of the astrophysicists are afraid of arguing against the Big Bang theory for fear of losing their jobs or of losing their privileges. The Anglo-American "mainstream smithy" even dictates the direction in which the herd of particle physicists has to walk, especially the particle physicists of the CERN in Switzerland. Unfortunately, the whole humbug, dictated by the "mainstream smithy", is swallowed by a herd of shy, uncritical Yes-men and eagerly spread by the compliant media.** This is simply scandalous. In what time are we living! The dark ages send their regards. Today the Roman Catholic Church does not care about whether the universe has been created by a Big Bang, or not. It has renounced involvement in this matter and left the court of misinformation. **The question comes up why certain interest groups are interested in spreading misinformation. Perhaps, in order to conceal having told humbug for more than 80 years might play a role. That would be too embarrassing, indeed. However, the true background is buried in the dark but we can conjecture that there is more behind it, nothing goods. The Big Bang theory is reflexively defended and promoted ad nauseam with spasmodic, missionary zeal , or, as one might say, with religious fervour . Just this kind of obdurateness indicates that a dubious interest group of "political esoterics" has substantial interest in keeping the Big Bang theory alive at any price.**

All mentioned pseudo-cosmological theories like the *Big Bang Theory*, the theory of *dark matter* and *dark energy*, as well as the theory of "*black holes*" and cosmic inflation are imaginative, non-scientific nonsense, violating laws of physics. The mentioned "phenomena" do not exist, as simple as that! In the year **2004**, 34 astrophysicists (professors) from 10 nations were fed up. They rebelled and vent their displeasure against the **total humbug** created in the field of astrophysical "research". They did this in form of an open letter and called their statement **cosmology statement**. It was obvious that the brave **"astro-mutineers"** found themselves in the safe haven of pension. They could not lose their jobs and did not underlie the unspoken absolute dictate of obedience in the field of the "astrophysical science apparatus". This fact impressively shows how intimidated the cosmologists are.

What about you? Do you really think that you are contributing to the best interest and benefit of mankind?

ABOUT "EVERYTHING" AND "NOTHINGNESS"

At first glance the term "Everything" seems to contrast with the term "Nothingness". However, there is no difference between those terms. Actually, "Everything" and "Nothingness" are the same thing, or, in other words, they are equivalent, similar to the equivalence of mass and energy.

How is this to be understood? The answer is to be found in Einstein´s theory of relativity.

When Einstein reflected, how it would be like if he was able to travel with the speed of light, the foundation of his theory of relativity was laid. He wondered what would happen if he held a mirror in front of his face while traveling with the speed of light. Due to the fact that he traveled exactly with the speed of light, the light photons, moving from his face towards the mirror would have to move superluminal. From the viewpoint of physics this is not allowed, as the speed of light is not at all exceedable. In consequence of this, he would not be able to see his face in the mirror. The mirror image would show a deep black; in other words, Einstein would see the "Nothingness", although he was existent. Actually, a mass is not allowed to travel at the speed of light but only to approaching the speed of light asymptotically. Thus, a mass or a body, traveling with almost the speed of light is always visible in a mirror.

Let us reflect another thought experiment. Imagine, an imaginary being without any mass would be able to travel side by side with a light wave. What would this light wave look like? Would this wave shimmer or glow like a wave-shaped fluorescent lamp? No, actually, one would see nothing. Why not? The speed of light is equally the maximum and the minimum speed of light (in vacuo). Furthermore, light has no rest mass. The rest mass of a stagnant light wave is, mathematically spoken, zero and therefore not existing (Nothingness). That is the reason, why it isn´t possible to transport light in a box. A moving light photon contents a specific amount of energy. Due to Einstein´s equation this amount of energy can be expressed in form of an equivalent mass, the so-called *dynamic mass* of a photon. By means of Planck´s equation $E = hf$

and Einstein´s equation $E = mc^2$ it is possible to calculate the dynamic mass of any electromagnetic wave length (photon) $m_{dyn} = \frac{hf}{c^2}$. So, from the viewpoint of an imaginary observer, moving beside a light wave (photon), the observed light wave would be in rest. As light has no rest mass, the light wave would not be existent from the viewpoint of a moving observer, traveling side by side with a light wave.

As we can see, the existence or non-existence of a light wave solely depends on the viewpoint of the observer. This, by implication means, that "Everything" and "Nothingness" are a question of the point of view.

Let us stay with our thought experiment. If an imaginary being without mass were to move with the speed of light, an additional interesting phenomenon would arise. Space and time would not play any role as they were, mathematically spoken, zero. Physically spoken they would form a singularity. Space (and everything within it) as well as time are relative terms. The perception of space and time depends on the point of view. The perception of space and time as we experience it due to the fact that we cannot move with the speed of light is a subjective experience. If we wanted to travel at the speed of light we would have to get rid of the mass of our body so that we would be a massless being. As long you are alive this is impossible. Traveling from one point to another with lapse of time is a specific phenomenon within space-time. Thus, a human being underlies the diktat of space and time and is able to experience causal relations. Experience needs time. The concept of causal relation, thus, the ability of experiencing chronological sequences, is an attribute of space and time. Only "within" space-time our actions and their consequences are causally related. The concept of causal relation is the unalterable basis of development and of the process of learning, which are synonyms of life.

Let us do yet another thought experiment. Imagine, that we are watching a light photon (kind of "wave packet"), traveling from one end to the other end of the Milky Way. If we were to view this procedure as an observer at rest, we would have to wait 100'000 years to eventually "celebrate" the arrival of the light photon. The diameter of the Milky

Way is about 100′000 light years, hence the light needs about 100′000 years to travel from one end to another end of the Milky Way. What would happen, if we could travel side by side with the light wave from one end of the Milky Way to the other end. How long would this voyage take? Well, it would not take any time, as for light time is not existent. In addition, space does not exist as well; or, to put it another way, the entity of all location forms, "from the viewpoint" of a light photon, a singularity. Past, present and future form a singularity as well. If one asked a light wave, how long it has been travelling and where its journey once began, the light wave would not understand the sense of the question, because space and time do not exist from the "viewpoint" of a light wave. The terms "Everything" and "Nothingness" do not form a contrast. So, the question: "Why is there not simply "Nothingness" and why did God decide to create "Everything" out of "Nothingness", does not make any sense, due to the fact that "Everything and "Nothingness" are the same pair of shoes "observed" from different points of view. The terms do not contradict one another. "Nothingness" is not the absence of "Everything". Consequently, nothing can be created out of "Nothingness", as "Nothingness" is "Everything". The postulation of a Big Bang, thus, the "Creation" of space and time out of "Nothingness", is pure nonsense. The Big Bang theory is from the physical point of view, false, even dumb and naïve. George Lemaitre´s primeval conception was a non-physical, esoteric idea that could not be taken for serious by Einstein. Not without any reason Einstein accused the Belgian priest of "awful knowledge of physics". Lemaitre was a substandard "scientist". "Nothingness" and "Everything" are equivalent, according to Einstein depending on the "point of view".

As well as "Nothingness" and "Everything" do not form a contrast, Einstein interpreted life and death as different "manifestations" of being. According to him, being never began and will never end. Consequently, being does not depend on life and death. Being or existence, thus, "Everything" and Nothingness" are independent of space and time, although "using" space and time in order to "produce" causal development. "Within" the space-time structure development is possible and "stored" on the "time axis" and in no way erasable. Past, present and future are stored in the singularity of time. It is there, just like

that. Material being is subject to the "diktat" of space and time and able to experience causal relationships between cause and effect. Experience is the fundamental sense of life.

Of course, these ideas discomfited the clergy and had to be defeated at any price. Unfortunately not only the clergy but also most of Einstein´s contemporaries couldn´t follow Einstein´s thoughts, even most of the astronomers couldn´t. They were simply trapped in an archaic perception of the world and were not able to understand him.

Light (or electromagnetic waves in general) is energy. Depending on the point of view, this energy is a dynamic energy (Everything) or potential energy (Nothingness). Merely light (electromagnetic waves in general) has a kind of "special status", it can be "Nothingness" (potential energy) as well as "Everything" (dynamic energy), depending on the point of view. Light is able to travel through space and to interact with matter within space, however, light does not only underlie the diktat of space-time, as space-time is zero from the "viewpoint" of a photon. Solely matter underlies the diktat of space-time. What is the proper sense of energy? Energy is information (matter is also information, as matter and energy are equivalent). A photon does not "know" space and time. This feature also applies to information. Information does not "know" space and time. This implication leads to the following conclusion. **Potential energy (Nothingness), is the totality of all information, independent of space and time. One could be inclined to define this feature with the term God.**

"Death is nothing(ness). For us believing physicists the differentiation between past, present and future is only an illusion, albeit a very persistent illusion."

Albert Einstein

ABOUT THE "QUANTIZED" WORLD

What is the meaning of the term "quantum"? Planck´s merit is justified on his awareness on the fact that light (or electro-magnetic waves in general), is "quantized". How should we understand this? Imagine a torch with the help of which you "shoot" a ray of light into the darkness of the universe. How much energy does this ray of light contain? Everyone knows that we had to use the energy of a battery to "produce" the light wave. But how do we calculate the energy content of the light wave. Exactly this option of calculating the energy content of light and electro-magnetic waves in general is the merit of Max Planck´s work. It is important that we don´t have to imagine a light wave as continuum but as a wave consisting of many little "wave-packeges", so-called quanta (*lat. quantum "how big", "how much"*). So, how can we calculate the energy content of these small "wave packeges" (quanta)?

In order to explain the "radiation spectrum of a so-called "black body", Max Planck randomly encountered (as he stated himself: …*with a lucky hand*…) the so-called *Planck constant* (6,626070040 x 10^{-34} *Jouleseconds*, Js). Planck named this value "*help*" (h) as he was looking desperately for a helping "value" that could explain the radiation spectrum. The *Planck constant* is – as well as the *speed of light* and the *gravitational constant* – a universal constant. Due to this "*help*", it was possible to calculate the energy content of any wave length. For this he derived the following equation:

$$E \;=\; hf = h\frac{c}{\lambda}$$

(h Planck constant, c speed of light, f frequency *(cycles per second)*, λ wave length)

Let us imagine we had emitted the light of the torch in a with a wave length of 500 nanometers. This corresponds to a wave length of 500 billionth of a meter, thus, 0.0000005 meter. Our sun, for example, has its emission maximum in the range of 500 nanometers. If we plug this value

into the equation (see above), we are able to calculate the energy content of a single wave packege (quant) with a wave length of 500 nanometers or a frequency of $6 \cdot 10^{14}$ cycles per second. A quant with a wave length of 500nm, therefore, has, according Planck´s equation an energy content of **3.975… x 10^{-19} Joule.**

Interestingly, not only electromagnetic waves are quantized. Even distances, space and time are quantized. The shortest possible distance amounts to **1.616 x 10^{-35} m**. This disatnce is called Planck length l¬p, which can be calculated with help of the universal constant h **(Planck constant)**, c **(speed of light)** and G **(gravitational contant)**:

$$l_P = \sqrt{\frac{hG}{2\pi c^3}}$$

As space is determined by three distances (length, width, hight) there exists also a quant of space **(4.224 x 10^{-105} m3)**, called Planck volume:

$$l_P^{\,3} = \sqrt{\frac{hG}{2\pi c^3}}^{\,3}$$

Furthermore, there is a quant of time, also called Planck time (**5.391 x 10^{-44} sec**):

$$t_P = \frac{l_P}{c}$$

As you can see, the whole world is quantized. Even space and time do not form a continuum but are quantized.

However, even a maximum possible wavelength exists in our universe. The longest wave length is defined by the **maximum possible distance** within the universe. This can be calculated by means of the following equation:

$$D_U = \frac{c^2}{g_U}$$

(D_U corresponds to the longest possible distance between two locations in universe, C corresponds to the speed of light and g_U corresponds to the gravitational potential of the universe)

With the help of this equation we are able to calculate the energy content of a quant with the maximum possible wavelength in the following way:

$$E = \frac{hc}{\lambda} \qquad \lambda_{max} = \frac{c^2}{g_U}$$

From this it follows:

$$E_{max} = \frac{hg_U}{c}$$

There is also a maximum possible mass, the mass of the universe, which is clearly defined and calculable by means of the following equation:

$$M_U = \frac{c^4}{4Gg_U}$$

Even the maximum possible space, the space of our universe, is calculable with the help of the following equation:

$$V_U = \frac{\pi c^6}{6g_U{}^3}$$

According to the last two equations, the mean density – and consequently the gravitational potential g_U of the universe – would be infinitely small if we assumed that the universe displayed an infinite volume and an infinitely large mass (in both equations gu is to be found in the denominator of the fractions). If we assumed an infinitely small gravitational potential g_U of the universe, the values for M_U and V_U would be infinitely large. This, however, would mean that galaxies, stars and planets could not exists, as the mean density of the universe was simply too small to allow concentration of matter. Such a universe would be as cold as ice allways and evermore. The temperature of an infinitely large universe would be - 273.15°C. Such a universe would be a dead universe and and not at all be able to generate any kind of life not even primitive amino acids. Life can only be generated within a universe that is limited in space and matter. The extent of the universe, thus, its volume, is clearly defined by its mass and vice versa. Mass and space of the universe are equivalent!

If we assume an unlimited mass and an unlimited space, thus, an unlimited entity, we have likewise to assume the existence of an unlimited number of universes. If we assume that life is the essential reason for existence, we have to state that there is an unlimited number

of universes showing the same characterisics as our universe. To assume only one universe is as shortsighted as the archaic perception of only one sun, one earth and one "crown of creation" (us). Hence, our universe would merely be a "quantum of universe" out of many, or to put it this way, a Planck Universe out of indefinite Planck Universes.

This assumption is, of course, highly speculative, as it cannot be proven currently. However, this hypothesis arises from a simple logic and opens the door to an interesting perspective.

LIST OF SOURCES (GRAPHICS)

Fig. 2, 5   "Die Wunder des Himmels"
                   Merkur Verlagsdruckerei Berlin, 1910

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